CLAR-00447

# Clarion

# SERVICE MANUAL

## HONDA MOTORCYCLE GENUINE RADIO

## MODEL RH-928V.EH-124U

Manufacturer CLARION CO., LTD.

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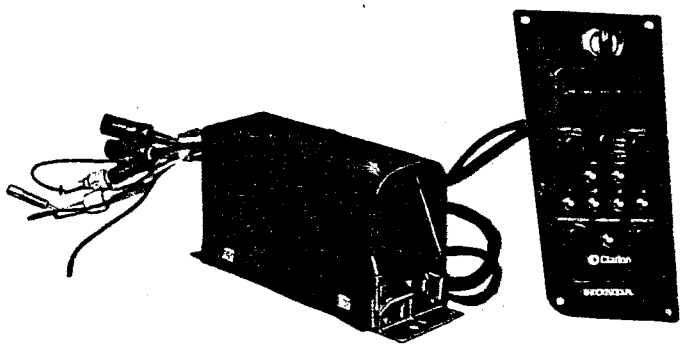

## ■SPECIFICATIONS:

**RH-928V**

**○ Radio section**

Circuit system: Superheterodyne
Tuning system: Electronic tuning
Receive range: AM 531kHz to 1,602kHz
FM 87.55 MHz to 108MHz
Intermediate frequency:
AM 459kHz
FM 10.7MHz
Maximum sensitivity:
AM Better than 32dB
FM Better than 18dB
(at 0.2W output)
Quieting sensitivity: AM Better than 34dB
(at 20dB S/N)
FM Better than 15dB
(at 30dB S/N)
Limiting sensitivity: FM Better than 30dB
A.G.C F.O.M: AM More than 45dB
Separation: FM More than 20dB
Fidelity:

| | | H | L |
|---|---|---|---|
| AM | 100Hz | −7±3dB | −6±3dB |
| | 4,000Hz | −17±5dB | −31±5dB |
| FM | 100Hz | −8±3dB | −7±3dB |
| | 7,000Hz | −16±5dB | −35±5dB |

Auto tuning stop sensitivity:

| | DX | LO |
|---|---|---|
| AM | 24dB~43dB | 50dB~73dB |
| FM | 10dB~30dB | 38dB~62dB |

**○ Inter com section**

Input impedance: 600Ω
Mic. sensitivity: −60±3dBm

**○ Synthesis**

Power supply voltage:
DC 14.0V
(10.8V to 15.6V)
Negative ground
Current consumption:
Less than 2.5A
(at max. output)
Less than 5mA
(With back-up)
Load impedance: 8Ω to 16Ω
Power output: More than 0.2W×2
(at 10% distortion)
More than 0.5W×2
(at max. output)
Semiconductors:
(Main unit) 2 LSIs, 16 ICs,
35 transistors, 7 FETs
and 38 diodes
(Remote controller)
7 LEDs and 15 diodes
Dimensions: (Main unit) Width 58mm
Height 95mm
Depth 160mm
(Remote controller) Width 70mm
Height 161.5mm
Depth 55mm
Weight: (Main unit) 1.2kg
(Remote controller) 0.5kg



Printed in Japan 298-2521-00 RH-928V EH-124U

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○ **EH-124U**

| | |
|---|---|
| Maximum output: | 20W×2 |
| Quieting output: | 12W×2 (at 1KHz 10% distortion) |
| Reproduction frequency: | 50Hz to 20KHz (±3dB) |
| S/N ratio: | 60dB |
| Input impedance: | 30KΩ |
| Input sensitivity: | 100mV (at quieting output) |
| Load impedance: | 4Ω×2 |
| Power supply voltage: | 14.0V (10.8V to 15.6V) Negative ground |
| Current consumption: | Less than 4.0A (at Max. output) |
| Semiconductors: | 4 ICs, 3 transistors, 11 diodes |
| Weight: | 580g |
| Dimensions: | Width 140mm<br>Height 25mm<br>Depth 100mm |

## ■COMPONENTS:

**RH-928V-01**

| | | |
|---|---|---|
| | Main unit | 1 |
| RKH-001-100 | Remote controller | 1 |
| 921-6917-00 | Parts bag | 1 |
| 345-3210-00 | Grommet | 1 |
| 716-0405-00 | Screw(M5x20) | 4 |
| 722-0367-00 | Hox-nut Hex | 1 |
| 734-4010-31 | D-sems hex-bolt | 2 |
| 852-6321-00 | Extension lead | 1 |
| PQH-022-100 | Accessory box | 1 |
| 093-0734-00 | Ant-jumper | 1 |
| 300-6135-00 | Mounting bracket | 1 |
| 335-1192-00 | Clamp | 2 |
| 852-6413-00 | Extension lead | 1 |
| 940-2540-01 | Escutcheon ass'y | 1 |

■**Sale separately:**

| | | |
|---|---|---|
| EH-124U-01 | Power booster | 1 |
| PAS-136-100 | Antenna ass'y | 1 |
| SKA-170-100 | Speaker kit | 1 |
| SPA-686-100(Right) (090-0050-31) | Speaker ass'y | 1 |
| SPA-686-101(Left) (090-0050-31) | Speaker ass'y | 1 |
| PNA-008-100 | Switch ass'y | 1 |

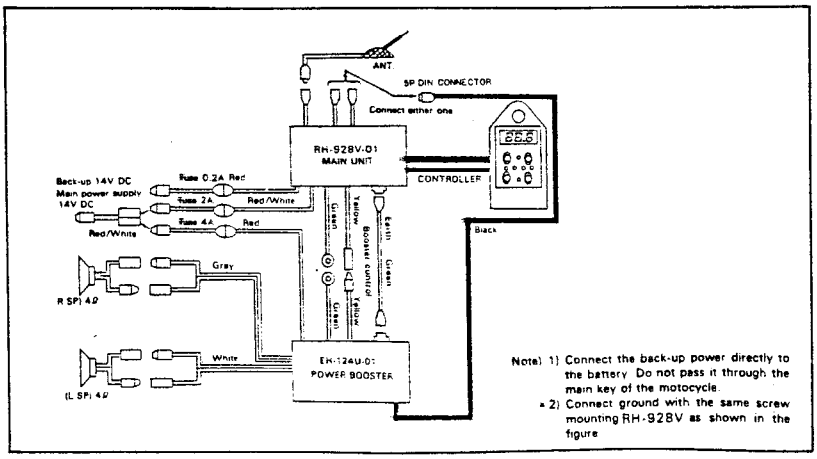
## ■FEATURES: ◎RH-928V

1. AM/FM MPX P.L.L synthesizer tuner with intercom and digital display.
2. Automatic station-selection and preset station-selection is possible with soft-touch switch.
3. Preset station-selection for 4-FM stations and 4-AM stations is possible.
4. P.L.L. circuit is used for stereo.
5. An exclusive noise killer system is built-in to remove ignition noise, etc. during FM or AM reception.
6. The back-up current (for memory) when the power is OFF is minimized because a C MOS is used. (Less than 5mA)
7. It's possible to communicate passenger and driver.
   The radio program is muted when the passenger communicate.
8. Water proof, vibration proof with anti-theft lock.

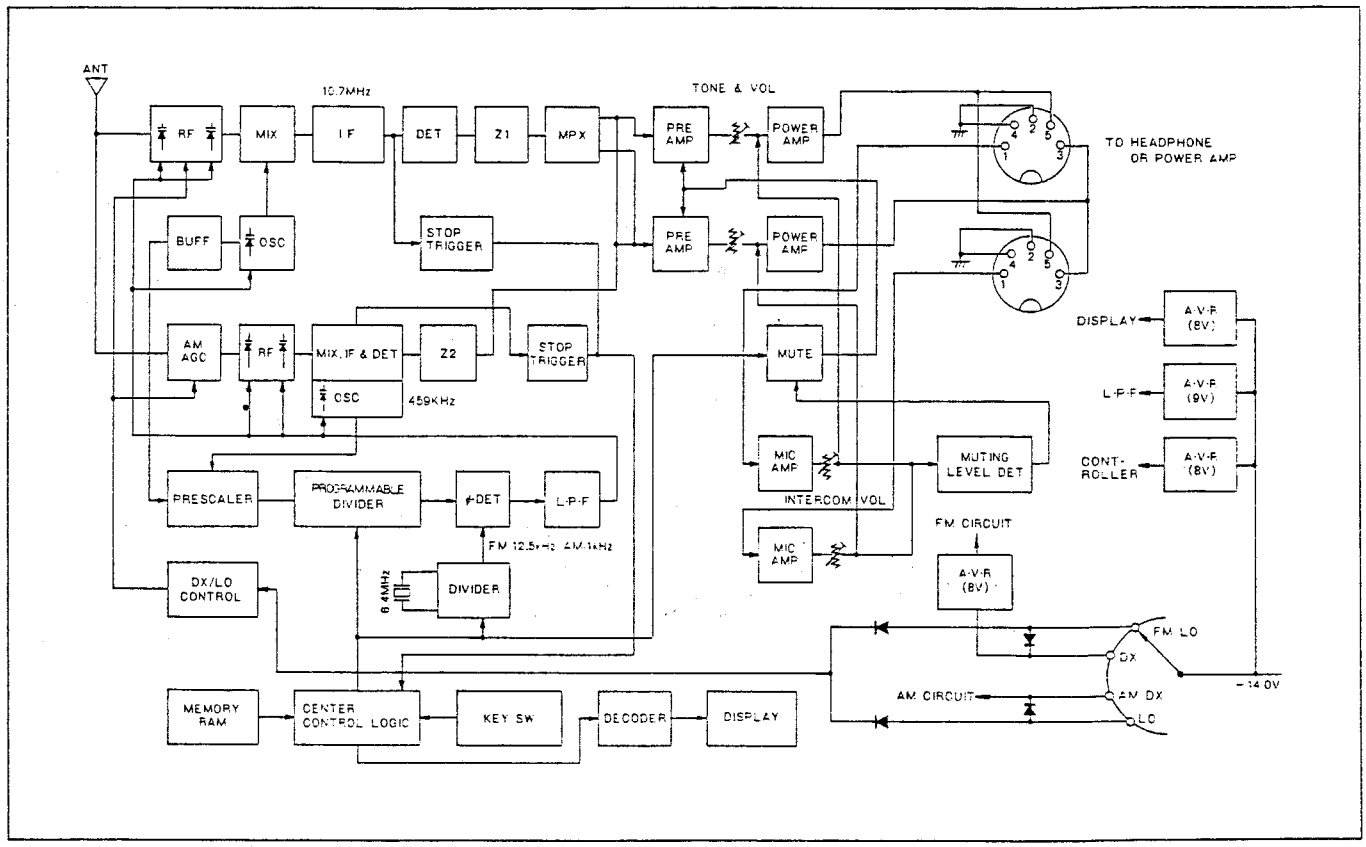
## ■CAUTION: ◎EH-124U

- Use ungrounded speakers only.
- Each speaker lead must be use each channel and do not ground.

## ■WIRE CONNECTION:



## BLOCK DIAGRAM:




## ADJUSTMENT PROCEDURE:

### 1. AM section

#### A) Adjustment IF

Since this adjustment determines the overall performance of the electronic tuner, perform adjustment with care.

Setting for adjustment

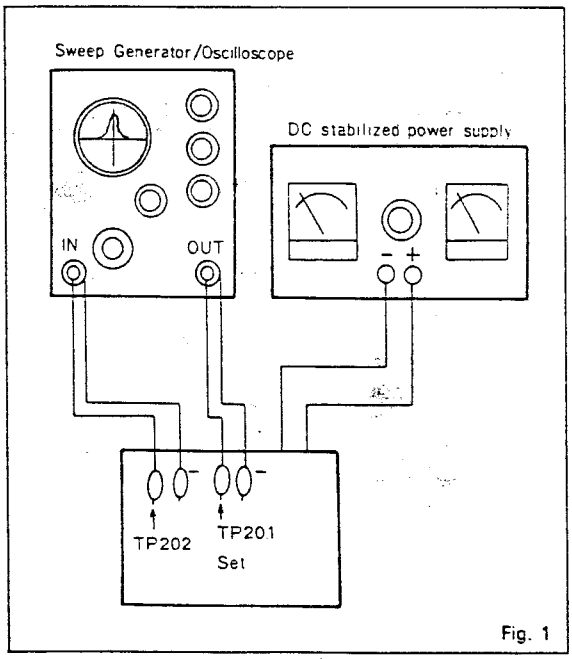



Fig. 1

1) Input the signal to TP201. (459kHz from sweep generator)
2) Output signal from TP202. (To oscilloscope)

a) Connect the set as shown in the diagram Fig.1 and turn the power ON.

b) Receive the upper limit frequency to tune the set, with the VR at min., Tone VR at max.

c) Adjust the output level of the sweep generator so that the IF waveform appearing on the oscilloscope is easy to adjust.
Set the Vertical Gain of the oscilloscope at around max. with the output of the sweep generator reduced as far as possible.

d) Adjust cores of IFT201,202 while observing the waveform. In this case, set the waveform so that it is not too sharp, with adequate roundness, symmetrical left/right and maximum amplitude. (Refer to Fig.2)

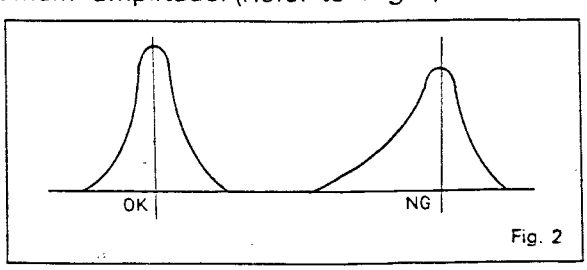
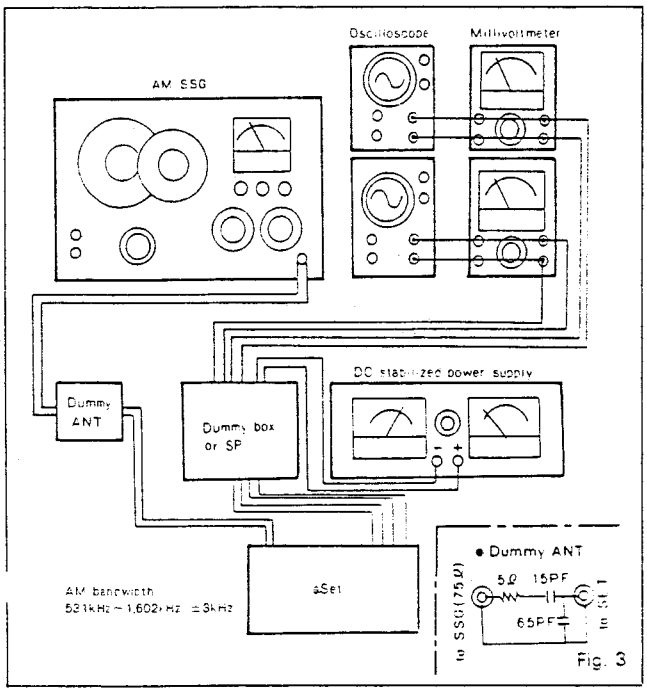



Fig. 2

B) Adjustment tracking
Setting for adjustment.




a) Connect the set as shown in the diagram above and turn the power ON.
Input the signal to the ANT terminal from an AM SSG.

b) Set the VR to Max., Tone VR, to High Max.

c) Set the reception frequency to 1,400kHz. Tune the AM SSG to 1,400kHz and adjust the RF trimmer (TC203) and ANT trimmer (TC201) to set the output of the set to maximum.

d) Set the reception frequency to 600kHz. Tune the AM SSG to 600kHz (30% modulation), adjust the RF coil (T203) and ANT coil (T201) to set the output of the set to maximum.

e) Repeat c) and d) procedures to obtain the maximum output.

f) Check that the bandwidth is 531kHz to 1,602kHz.

g) Set the AM SSG to 600kHz and 1,400kHz in sequence to check that the highest sensitivity is obtainable.

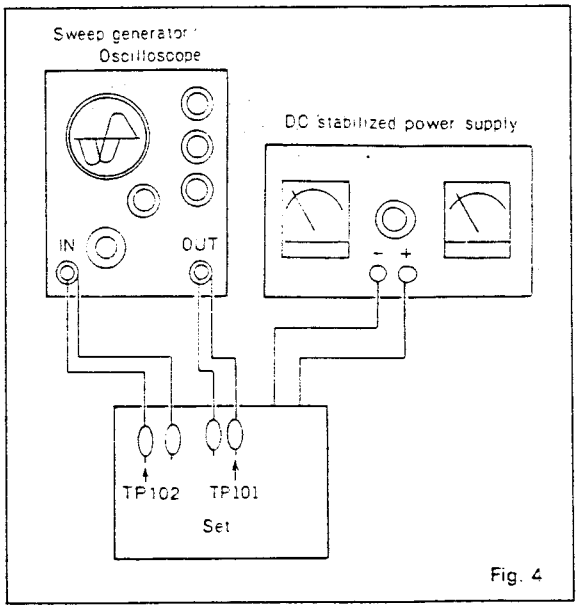
Note: It is not required to adjust the ANT trimmer after the set is installed in the car.

C) Adjustment stop trigger
Connect a synchroscope to TP207. Adjust IFT205 to obtain a maximum waveform on the synchroscope at an SSG output of 10dB to 30dB.

D) Regarding noise killer system (For AM)
The noise killer circuit has been perfectly adjusted with the help of special measuring instruments.
Therefore, do not touch the core, semifixed VR, etc. of this circuit. However, if pulse noise is found to be remarkably high in actual use in car, it meaus that adjustment of the noise killer system is disturbed. In this case, adjust VR201. Noise can be easily taken when VR201 is near the center. Also, readjust T204 and VR202.

2. FM section

A) IF & S curve adjustment
Setting for adjustment



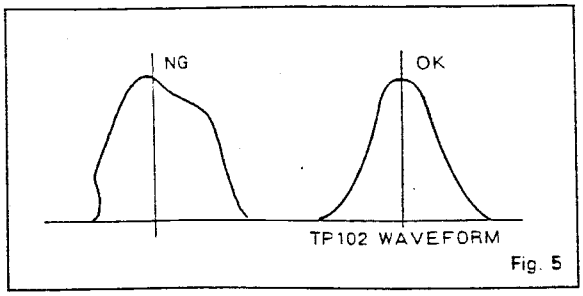

a) Connect the set as shown in the figure above and turn the power ON.

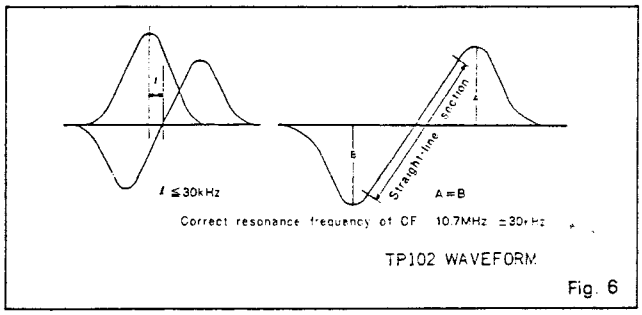
b) Input the 10.7MHz signal to TP101 from the sweep generator.

c) Input the signal from TP102 to the oscilloscope.

d) Detune by tuning the IFT105.
Next adjust the IFT101 and IFT104 so that the waveform becomes high and symmetrical.(Refer to Fig.5)

e) Next adjust the IFT105 for waveform having good symmetry and good linearity.
In this case, make the straight-line section
In this case, make the straight-line section of the S-curve as long as possible.
Set the center of the S-curve to the same point as the peak of the IF curve as in adjustment A) (Refer to Fig.6)






TP102 WAVEFORM

Fig. 6

## B) Adjustment tracking

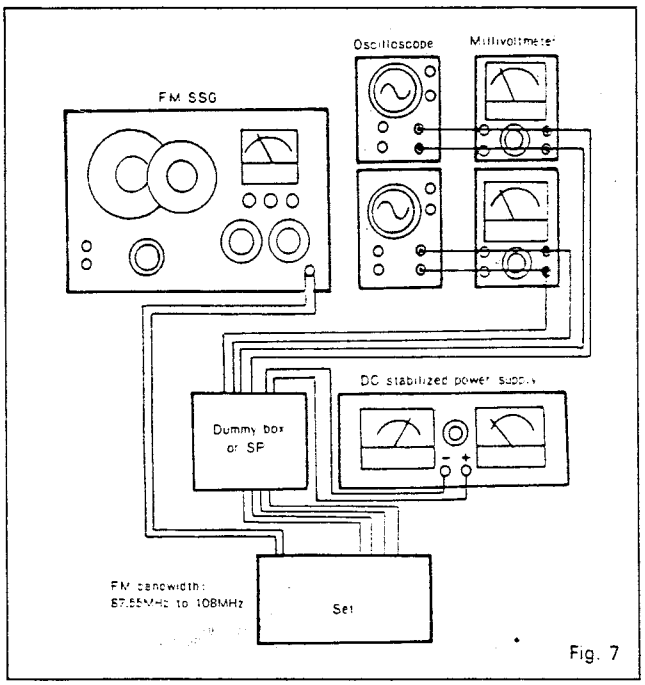



Fig. 7

a) Connect the set as shown in the diagram above and turn the power ON.

b) Set the VR to Max., Tone VR, to High Max.

c) Set the FM SSG to 87.55MHz and adjust T101 and T102 so that the output of the set is max.

Set the FM SSG to 108MHz and adjust TC 101, TC102 to obtain the max. output of the set.

## C) Adjustment of multiplex section

### a) Adjusting V.C.O

This adjustment is for adjusting the frequency of the voltage controlled oscillator (V.C.O).
First set the band switch to FM.
Connect TP104 to the vertical terminal of oscilloscope and calibrated 19kHz signal (calibration use signal of stereo modulates) to the horizontal terminal.
Now adjust the semifixed potentiometer VR 105 so that the Lissajuous figure does not move.

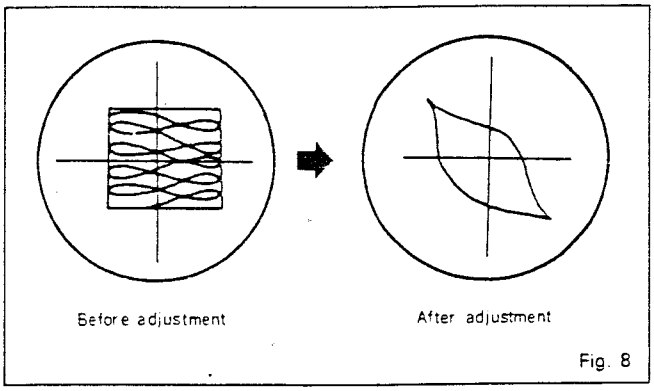



Fig. 8

NOTE: The Lissajuous figure will not become a circle because of sine wave and square wave.

### b) Adjustment of Separation

After completing the adjustment (a), set to FM/ST state and adjust the input to the extent that separation of the output can be easily checked. At this time adjust VR104 so that left and right separation becomes maximum and the L, R outputs become equal.

## D) Adjustment stop trigger

Drop TP106 to ground and connect a DC voltmeter to TP103.
Set the SSG output to 10dB to 30dB and adjust IFT106 for maximum reading on the DC voltmeter. Adjust the stop sensitivity with VR101.

## E) Regarding noise killer system (For FM)

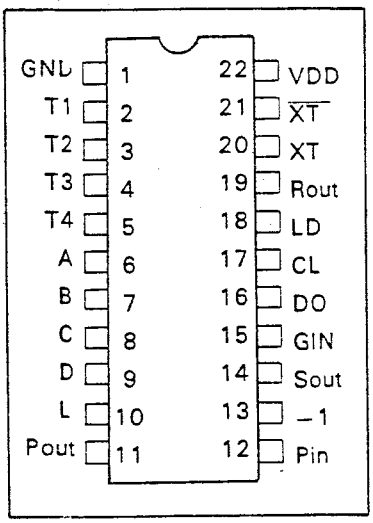
The noise killer circuit has been perfectly adjusted with the help of special measuring instruments.
Therefore, do not touch the core, semifixed VR, etc. of this circuit. However, if pulse noise is found to be remarkably high in actual use in car, it means that adjustment of the noise killer system is disturbed. Therefore, in this case, adjust only VR102 and VR103.
Noise gets eliminated as VR103 is turned towards the center position and VR102 is turned in the clockwise direction.
However, do not turn these controls more than necessary. If no change occurs by adjusting these controls, bring the controls back to their original position.

NOTE: Some pulse noise may remain. It is not a fault of the noise killer system. If noise produced by car is very large, the car may not be fitted with basic noise killer.

# EXPLANATION OF IC'S FUNCTION:

## ○IC 051-0269-01 (TC9123P) PLL

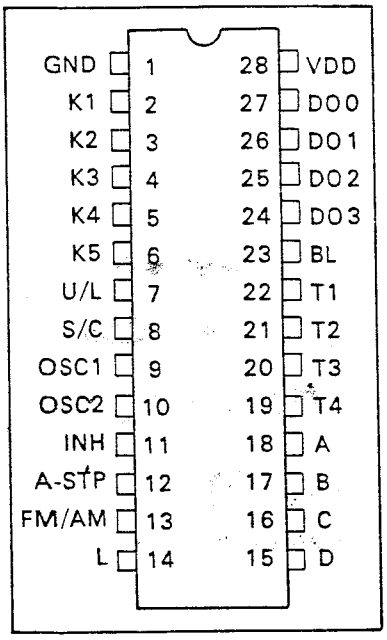
PIN connection




| PIN No. | Symbol | Name | Function and operation |
|---|---|---|---|
| 1 | GND | GND terminal | |
| 2<br>3<br>4<br>5 | T1<br>T2<br>T3<br>T4 | Digit timing signal input terminals | A to D program data read digit specification digit timing input terminals. T1 is the least significant digit and T4 is the most significant digit. |
| 6<br>7<br>8<br>9 | A<br>B<br>C<br>D | Program data input terminals | Receiving mode setting data, programmable counter divided data input terminals. |
| 10 | L | Load input terminal | A to D data read instruction input terminal. Data are read when this terminal is "1" level and the previous data are held, regardless of the other inputs, when it is "0" level. |
| 11 | Pout | Programmable counter output terminal | Programmable counter divided output terminal. |
| 12 | PIN | Programmable counter input terminal | Programmable counter input terminal. |
| 13 | −1 | Division shift instruction input terminal | |
| 14<br>15 | Sout<br>GIN | Low-pass filter FET terminal | |
| 16<br>17<br>18 | DO<br>CL<br>LD | Phase comparator output terminals | Phase comparator output terminals. Connects to the low-pass filter. |
| 19 | Rout | Standard output terminal | Standard frequency output terminal. 12.5kHz at FM, 1kHz at AM. |
| 20<br>21 | XT<br>$\overline{XT}$ | Crystal oscillator connection terminals | 6.4MHz crystal oscillator connection terminals. |
| 22 | VDD | Power supply terminal | |

## ○IC 051-0270-00 (TC9124AP) FM/AM Synthesizer tuner controller

PIN connection




| PIN No. | Symbol | Name | Functions and operation |
|---|---|---|---|
| 2<br>〜<br>6 | K1<br>〜<br>K5 | Key signal input terminals | Various operation keys input. A different operation is specified by the timing inputs T1 to T4. |
| 7 | U/L | Band switching input terminal | |
| 8 | S/C | Synthesizer switching input terminal | |
| 9 | OSC1 | Oscillator terminal 1 | |
| 10 | OSC2 | Oscillator terminal 2 | |
| 11 | INH | Inhibit terminal | Inhibit control terminal at memory back-up.<br>Normal operation at H input, inhibit state at L input. |
| 12 | A-STP | Auto stop signal input terminal | When a H input is applied to this terminal during automatic scanning, scanning is stopped. |
| 13 | FM/AM | FM/AM switching output terminal | H output at FM, L output at AM. Used in prescaler FM/AM switching and FM/AM mode display. |
| 14 | L | PLL LSI load signal output | Connects to L of PLL LSI (TC9123P) and specifies the data read timing. |
| 15<br>16<br>17<br>18 | D<br>C<br>B<br>A | Frequency data output terminals | Receiving frequency data output terminals. Four-digit BCD data synchronized with timings T1 to T4 are serially output. Used as display driver and TC9123P programmable counter divided controller. |
| 19<br>20<br>21<br>22 | T4<br>T3<br>T2<br>T1 | Digit signal output terminals | Digit signal output that controls the A to D output data, K1 to K5 key input timing, DO0 to DO3 display output and all other timing. |
| 23 | BL | Display blanking output terminal | |
| 24<br>25<br>26<br>27 | DO3<br>DO2<br>DO1<br>DO0 | Mode display driver output | Driver output to display the memory read address, auto scan, memory write enable and other TC9124AP operating states. Dynamically lighted in synchronization with T1 to T4. |

## ■DESCRIPTION OF OPERATION:

○ PLL

Fig. 1 is a block diagram of the receiving frequency control loop.

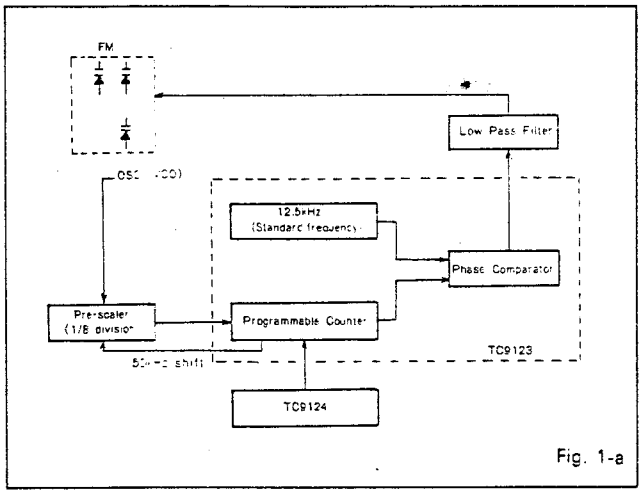


Fig. 1-a

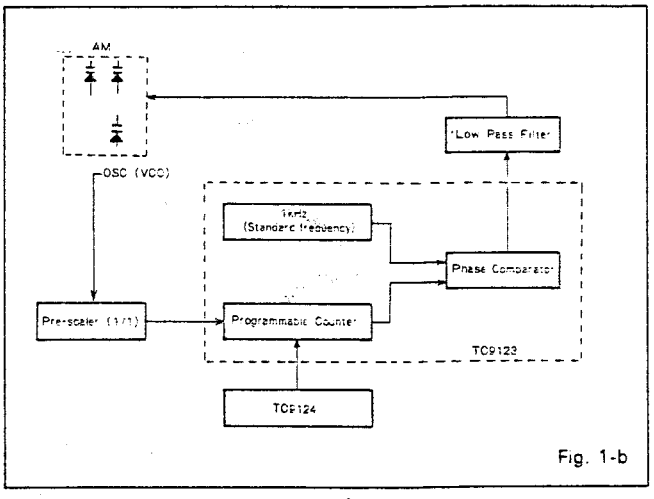


Fig. 1-b

Fig. 1-a is the block diagram for FM reception and Fig. 1-b is the block diagram for AM reception. When the receiving frequency data from PLL control TC9124 enters the programmable counter in TC9123, the programmable counter divides the VCO frequency through a prescaler corresponding to the receiving frequency data. The division ratio of the programmable counter is determined by the receiving frequency. The output of the programmable counter when the receiving frequency from the TC9124 is received correctly is the same as the standard frequency. When the receiving frequency is low (compared to the receiving frequency data from the TC9124), the output of the programmable counter is lower than the standard frequency and the voltage of the varicap is increased through a phase comparator and low-pass filter. When the receiving frequency is high, the voltage of the varicap decreases similarly.

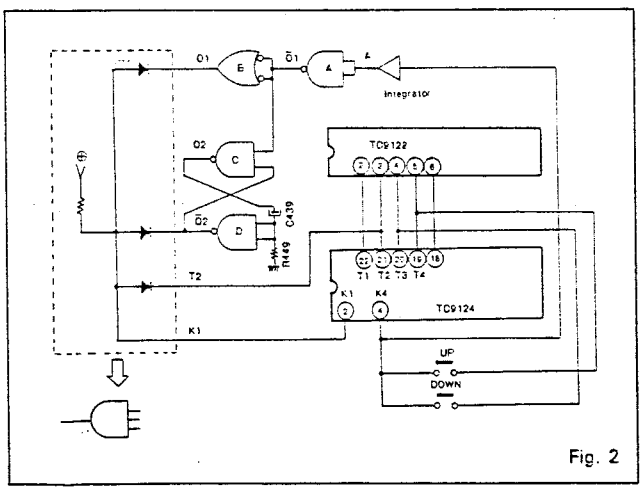


Fig. 2

Fig. 2 shows the autosearch circuit. If the UP switch was pushed, for example, signal T4 enters K4 and PLL control LSI TC9124 acts to increase the receiving frequency 1 step (9kHz at AM, 50kHz at FM).

At the same time, signal T4 is integrated by the integrator and the NAND (A) (–○A⊐) output ($\bar{Q}$) is made "L". Therefore, Q1 becomes "H" and Q2 also becomes "H". Consequently, NAND (D) output (Q2) becomes "L" for the time (approximately 0.5sec) determined by the time constant of C439 and R449 and then returns to "H". Therefore, if the UP switch is pushed before $\bar{Q}$2 goes high (approximately 0.5sec), the receiving frequency is increased 1 step. Since $\bar{Q}$2 goes "H" and Q1 also goes "H" even if the UP switch is pushed for more than 0.5 sec, signal T2 enters K1, and TC9124 performs autosearch. (See Fig. 3.)

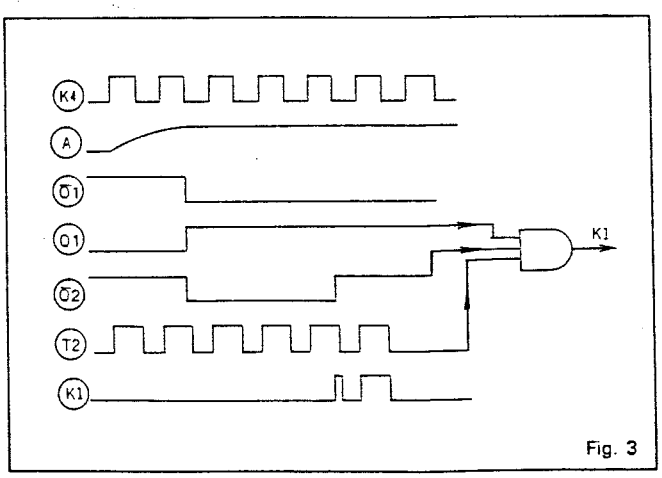


Fig. 3

The above operation is also the same when the DOWN switch is pushed.

## ○ Auto Search Stop

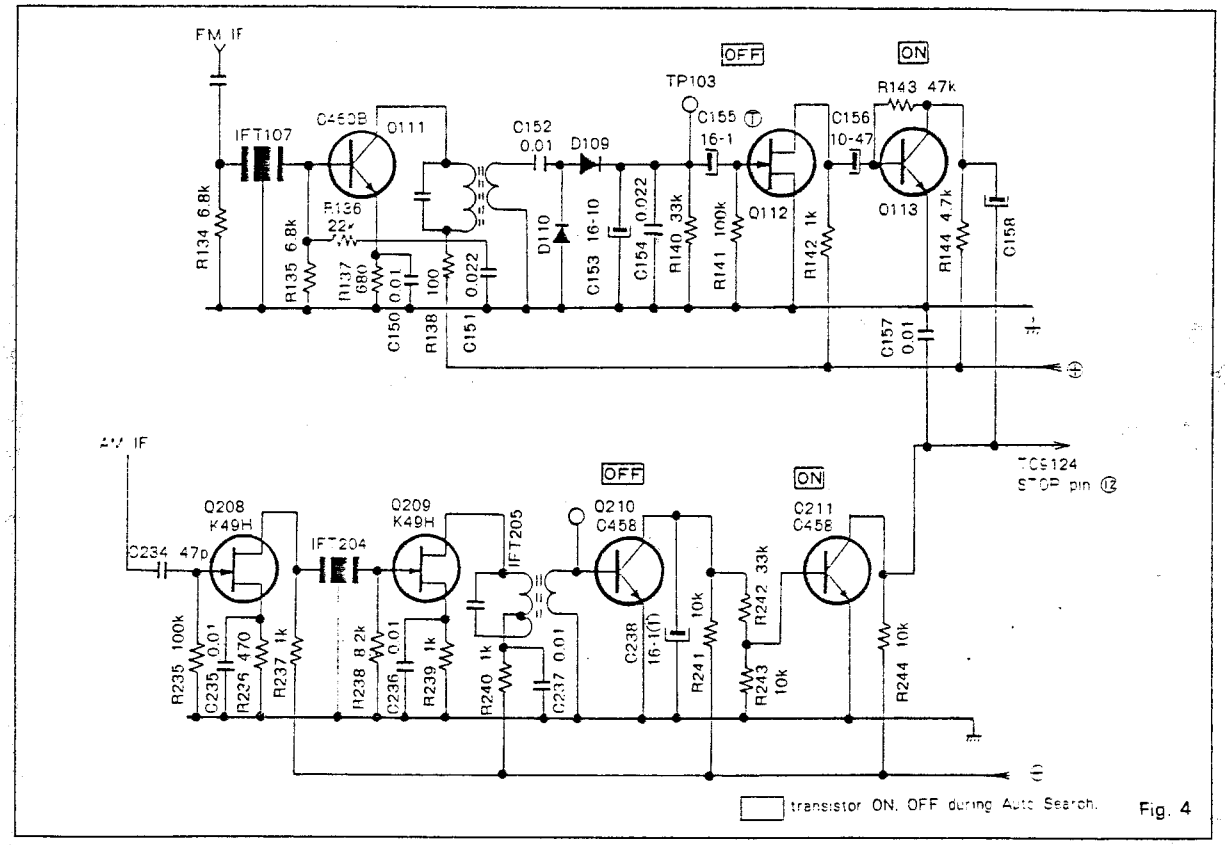


Fig. 4

When a broadcast frequency is received at Auto Search at FM, Q112 turns ON, Q113 turns OFF, one pulse enters pin (12) of TC9124, and Auto Search stops. At AM, Q210 turns ON, Q211 turns OFF, and Auto Search stops similarly.

## ○ AM/FM Switching

When signal T1 is removed from pin K5 of TC9124, input signal T2 is also removed. When the AM/FM selector switch is set to the FM side, signal T2 enters pin K5 and the set switches to FM reception. When the AM/FM selector switch is set to the AM side, signal T1 enters pin K5 and the set switches to AM reception.

At FM reception, an "H" signal feeds to the AM/FM pin (pin 13) and at AM reception, a "L" signal feeds to the AM/FM pin (pin 13). Consequently, at FM reception (AM/FM pin "H"), Q405 turns ON, Q406 turns ON, and +B connects to pin (1) of the 10 pin connector. At AM reception (AM/FM pin "L"), Q405 turns OFF, Q407 turns ON, Q408 turns ON, and +B connects to pin (2) of the 10 pin connector.

Pin (1) and pin (2) of the 10 pin connector supply power to the FM section and AM section, respectively.

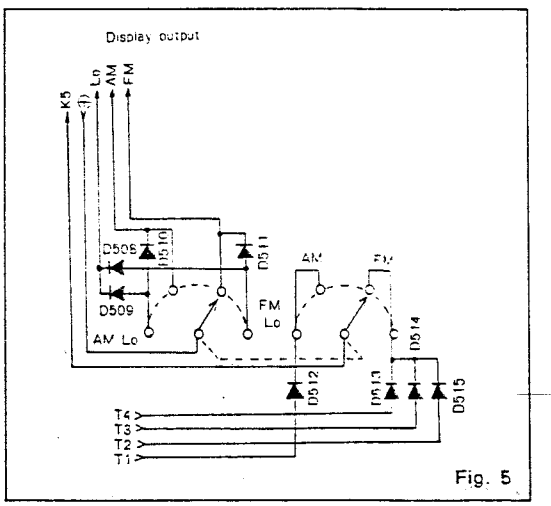


Fig. 5

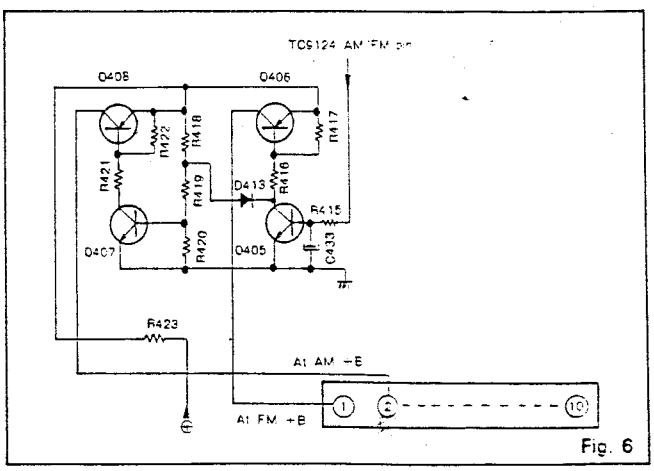


Fig. 6

# ■TROUBLESHOOTING:

◎AM Tuner circuit

| Malfunction | Defective point and cause | Corrective action |
|---|---|---|
| No sound | o IC201, 202 faulty<br>o Transistor Q204, 206 faulty<br>o Diode D202, 203, 204 faulty<br>o Transistor Q207 faulty | Replace<br>Replace<br>Replace<br>Replace |
| Volume is low<br>Distortion<br>sensitivity is poor | o Trimmer TC201, 202, 203 adjustment faulty<br>o Coil T201, 202, 203 faulty<br>o IFT201, 202 faulty | Readjust<br>Replace<br>Replace |
| AM search does not stop | o Transistor Q208, 209, 210, 211 faulty<br>o IFT204, 205 faulty | Replace<br>Replace |

◎FM Tuner circuit

| Malfunction | Defective point and cause | Corrective action |
|---|---|---|
| No sound | o IC101, 102, 103, 104 faulty<br>o IFT104, 105 faulty<br>o Diode D107, 108 faulty<br>o Transistor Q107, 108 faulty<br>o AVR Transistor Q114, Diode D111 faulty<br>o Diode D103, 104, 106 faulty<br>o Transistor Q106 faulty | Replace<br>Replace<br>Replace<br>Replace<br>Replace<br>Replace<br>Replace |
| Volume is low<br>Distortion<br>sensitivity is poor | o Transistor Q101, 102 faulty<br>o Coil T101, 102 L104 adjustment faulty<br>o IFT101, 102, 103 faulty | Replace<br>Readjust<br>Replace |
| FM search does not stop | o Transistor Q111, 112, 113 faulty<br>o Q109, 110, IFT106, 107 faulty | Replace<br>Replace |
| Separation is bad | o IC104 faulty<br>o VR104, 105 adjustment faulty | Replace<br>Readjust |
| Indicator does not light | o IC104 faulty<br>o Q409, D519 faulty | Replace<br>Replace |

◎Common section

| Malfunction | Defective point and cause | Corrective action |
|---|---|---|
| No sound | o Blown fuse<br>o Variable resistor. Switch section faulty<br>o Coil 010-1686-00 faulty<br>o D510, 511 faulty<br>o Choke 009-0470-02 faulty<br>o C344 faulty | Replace<br>Replace<br>Replace<br>Replace<br>Replace<br>Replace |

| Malfunction | Defective point and cause | Corrective action |
|---|---|---|
| One channel does not work | o IC302, 303 faulty<br>o C329, 330 faulty<br>o HEADPHONE open<br>o Q303, 304 faulty<br>o Q305, 306 faulty | Replace<br>Replace<br>Replace<br>Replace<br>Replace |
| Volume is low or distortion | o IC302, 303 faulty<br>o C329, 330 faulty<br>o C327, 328 faulty | Replace<br>Replace<br>Replace |
| Abnormal sound is produced | o IC302, 303 faulty<br>o C329, 330 faulty | Replace<br>Replace |

©Frequency counter section

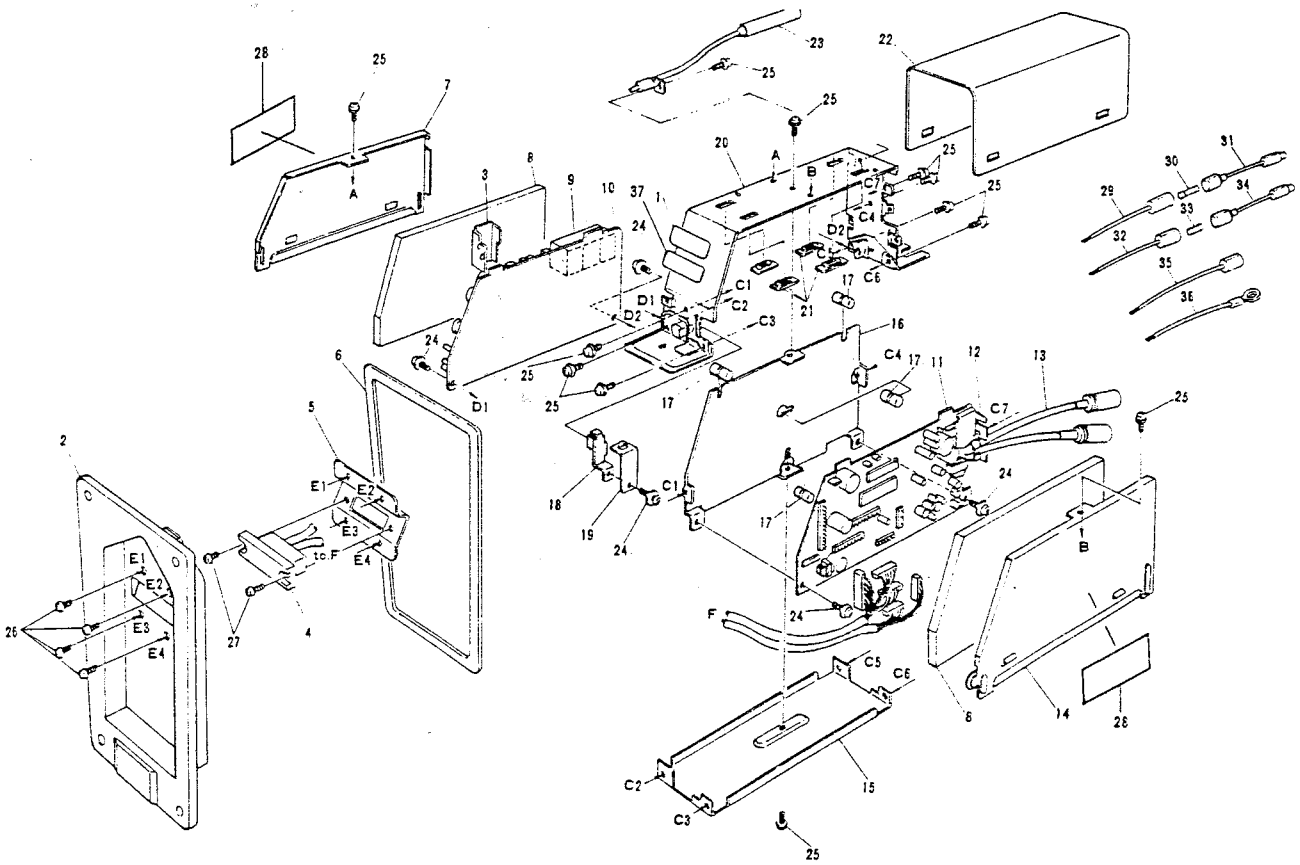
| Malfunction | Defective point and cause | | Corrective action |
|---|---|---|---|
| | RH-928 | RKH-001 | |
| Does not display | o IC402, 404, 405 faulty | o LED D521, 522 faulty | Replace<br>Replace |
| Does not indicate | | o D508~511 faulty<br>o D516~520 faulty | Replace<br>Replace |

©Control section

| Malfunction | Defective point and cause | | Corrective action |
|---|---|---|---|
| | RH-928 | RKH-001 | |
| Preset does not work | o IC402 faulty | o Switch M1~M4 faulty<br>o D504~507 faulty | Replace<br>Replace<br>Replace |
| Memory does not work | o IC402 faulty | o Switch M1~M4, ME faulty | Replace<br>Replace |
| AM/FM search does not stop | o Q402 faulty<br>o IC402, 406 faulty | | Replace<br>Replace |
| Manual tuning does not work | o IC402, 406 faulty<br>o D414~419 faulty | o Switch UP, DN faulty | Replace<br>Replace<br>Replace |

# ■EXPLODED VIEW:

◎Main section (RH-928V)



# ■PARTS LIST:

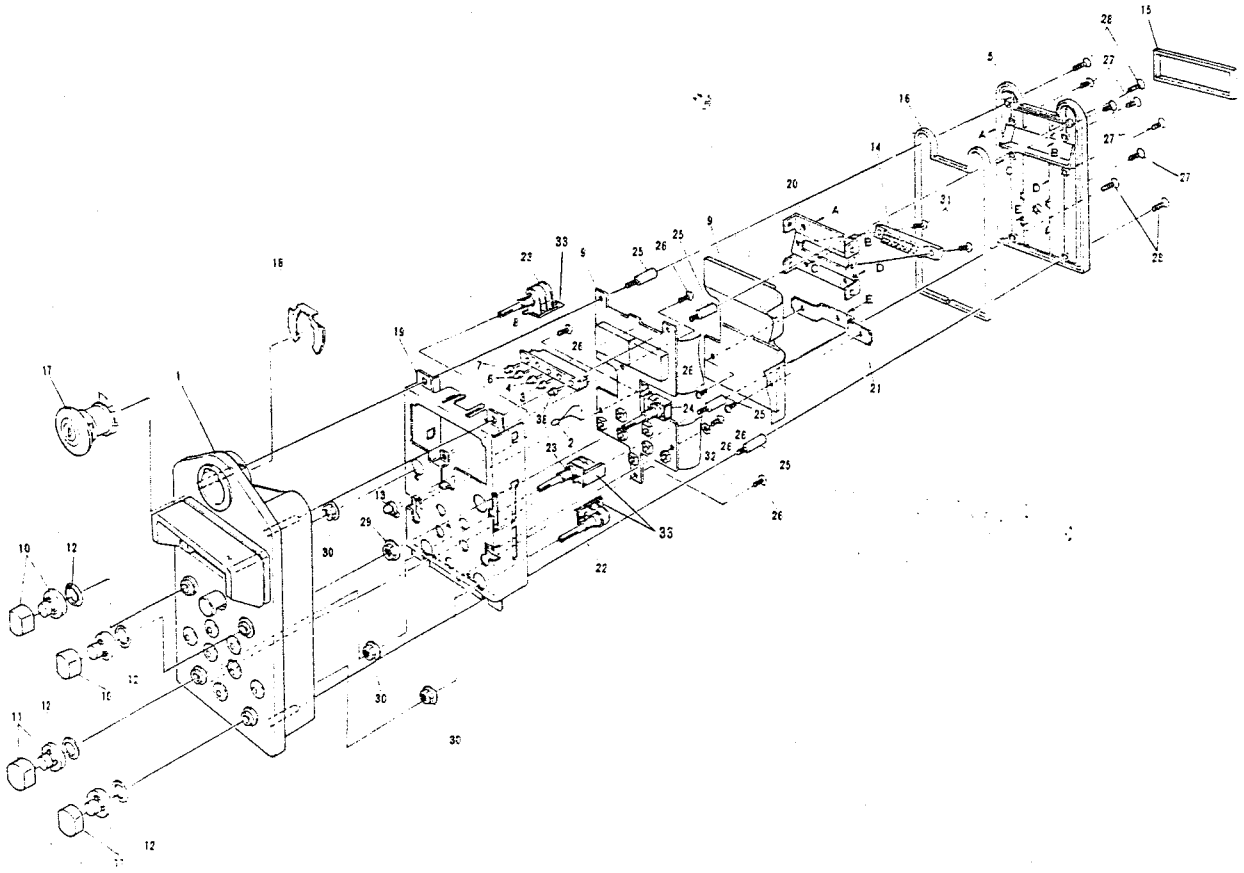
◎Main section(RH-924V)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| 1 | 285-0845-03 | Guide label | 1 |
| 2 | 940-0222A | Escutcheon ass'y | 1 |
| 3 | 330-6988-00 | Shield cover | 1 |
| 4 | 852-6316-01 | Extension lead | 1 |
| 5 | 330-6979-00 | Jack bracket | 1 |
| 6 | 345-3203-00 | Rubber | 1 |
| 7 | 305-0209-00 | Side cover | 1 |
| 8 | 345-3209-00 | Buffer sheet | 1 |
| 9 | 330-6982-00 | Shield case | 1 |
| 10 | 099-5717-01 | P.W.B | 1 |
| 11 | 099-5718-01 | P.W.B | 1 |
| 12 | 944-0562-00 | Filter ass'y | 1 |
| 13 | 852-6320-00 | Extension lead | 1 |
| 14 | 305-0210-00 | Side cover | 1 |
| 15 | 304-0326-00 | Lower cover | 1 |
| 16 | 330-6981-00 | Shield plate | 1 |
| 17 | 345-3212-00 | Absorbent | 4 |
| 18 | 321-0852-00 | Clamp | 1 |
| 19 | 321-0853-00 | Clamp | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| 20 | 312-0204-00 | Chassis | 1 |
| 21 | 345-3211-00 | P.W.B holder | 1 |
| 22 | 345-3213-00 | Waterproof cover | 1 |
| 23 | 092-0522-01 | Antenna receptacle | 1 |
| 24 | 735-3008-11 | Double sems screw (M3x8) | 5 |
| 25 | 732-3006-11 | Sems screw(M3x6) | 12 |
| 26 | 714-2606-49 | Machine screw (M2.6x6) | 4 |
| 27 | 714-2606-11 | Machine screw (M2.6x6) | 2 |
| 28 | 347-0729-00 | Adhesive paper | 2 |
| 29 | 850-2057-00 | A-lead | 1 |
| 30 | 120-0020-00 | Fuse(2A) | 1 |
| 31 | 850-2058-01 | A-lead | 1 |
| 32 | 850-2059-00 | A-lead | 1 |
| 33 | 120-0002-00 | Fuse(0.2A) | 1 |
| 34 | 850-2060-01 | A-lead | 1 |
| 35 | 852-6446-00 | Extension lead | 1 |
| 36 | 852-6317-00 | Bonding wire | 1 |
| 37 | 286-3678-00 | Set plate | 1 |

## EXPLODED VIEW:

©Remote controller (RKH-001-100)



## PARTS LIST:

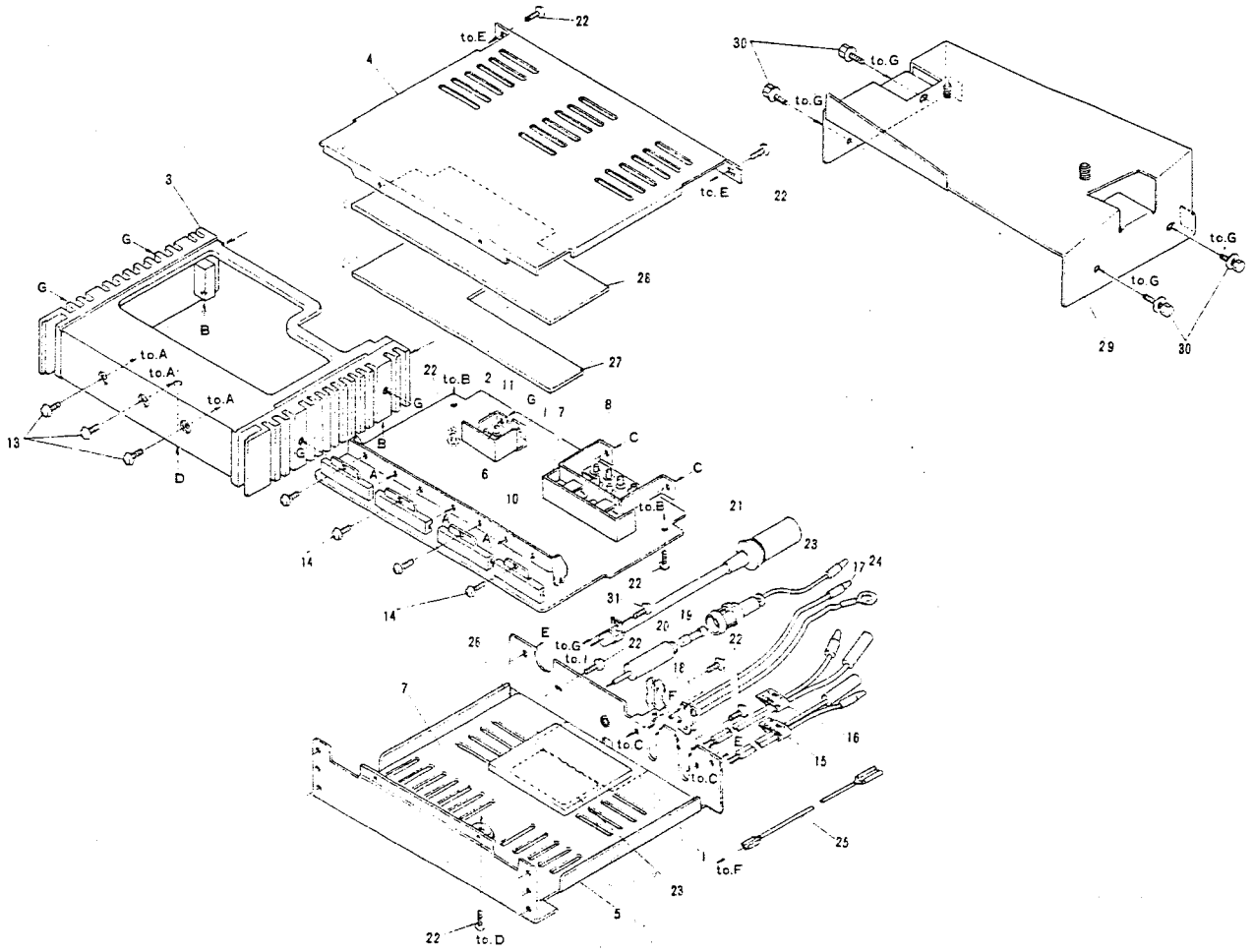
©Remote controller (RKH-001-100)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| 1 | 940-0223A | Escutcheon ass'y | 1 |
| 2 | 017-0324-03 | Pilotlamp | 1 |
| 3 | 001-0207-03 | LED (Orange) | 1 |
| 4 | 001-0207-01 | LED (Green) | 1 |
| 5 | 335-1156-00 | Controller cover | 1 |
| 6 | 001-0207-02 | LED (Yellow) | 2 |
| 7 | 001-0207-00 | LED (Red) | 1 |
| 8 | 335-1155-00 | LED holder | 1 |
| 9 | 099-5719-00 | P.W.B | 1 |
| 10 | 380-3969-00 | Knob | 2 |
| 11 | 380-3969-01 | Knob | 2 |
| 12 | 345-3200-00 | Spacer | 4 |
| 13 | 345-3087-03 | Pilotlamp holder | 1 |
| 14 | 076-0212-00 | Jack | 1 |
| 15 | 345-3202-00 | Adhesive rubber | 1 |
| 16 | 345-3203-00 | Adhesive rubber | 1 |
| 17 | 098-0160-00 | Lock ass'y | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| 18 | 750-2021-00 | Spring lock | 1 |
| 19 | 309-0401-00 | Front plate | 1 |
| 20 | 330-6978-00 | Jack bracket | 1 |
| 21 | 330-6980-00 | P.W.B bracket | 1 |
| 22 | 012-3786-01 | Variable resistor | 1 |
| 23 | 012-3787-01 | Variable resistor | 2 |
| 24 | 013-3541-00 | Band select switch | 1 |
| 25 | 716-0404-00 | Screw | 4 |
| 26 | 714-2604-81 | Machine screw (M2.6x4) | 6 |
| 27 | 714-2606-49 | Machine screw (M2.6x6) | 5 |
| 28 | 714-2608-49 | Machine screw (M2.6x8) | 4 |
| 29 | 722-0370-00 | Nut | 1 |
| 30 | 722-0368-00 | Nut | 3 |
| 31 | 714-2608-11 | Machine screw (M2.6x8) | 2 |
| 32 | 746-0660-00 | Flat washer | 1 |
| 33 | 099-5870-00 | P.W.B | 3 |

# EXPLODED VIEW:

◎Main section (EH-124U)



# PARTS LIST:

◎Main section (EH-124U)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| 1 | 285-0826-00 | Guide label | 1 |
| 2 | 944-0555-00 | Filter ass'y | 1 |
| 3 | 313-1065-03 | Heat sink | 1 |
| 4 | 310-0973-03 | Upper case | 1 |
| 5 | 311-0975-03 | Lower case | 1 |
| 6 | 330-6784-00 | IC holder | 1 |
| 7 | 330-6783-00 | Shade | 1 |
| 8 | 944-0541-00 | Filter ass'y | 1 |
| 9 | 347-0845-01 | Insulator | 1 |
| 10 | 051-0256-02 | IC (TA7217AP) | 4 |
| 11 | 099-5473-01 | P.W.B | 1 |
| 12 | 286-4390-00 | Set plate | 1 |
| 13 | 714-3010-81 | Machine screw (M3x10) | 3 |
| 14 | 714-3004-81 | Machine screw (M3x4) | 4 |
| 15 | 851-2327-01 | Speaker lead (R) | 1 |
| 16 | 851-2328-00 | Speaker lead (L) | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| 17 | 852-6319-00 | Extension lead | 1 |
| 18 | 335-0580-00 | Lead holder | 1 |
| 19 | 120-0040-00 | Fuse (4A) | 1 |
| 20 | 850-2031-00 | A-lead | 1 |
| 21 | 852-6322-00 | Extension lead | 1 |
| 22 | 731-3006-81 | Taptight (M3x6) | 8 |
| 23 | 850-2062-00 | A-lead | 1 |
| 24 | 852-6324-00 | Extension lead | 1 |
| 25 | 852-6323-00 | Extension lead | 1 |
| 26 | 345-3204-00 | Insulator | 1 |
| 27 | 345-3205-00 | Insulator | 1 |
| 28 | 345-3206-00 | Insulator | 1 |
| 29 | 300-6066-00 | Mounting bracket | 1 |
| 30 | 734-5010-31 | D-sems screw (M5x10) | 4 |
| 31 | 731-3005-81 | Taptight (M3x5) | 1 |
| | | | |

# PARTS LIST:

## ©Tuner circuit (RH-928V)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| $D_{111}$ | 001-0101-01 | Diode (HZ9B) | 1 |
| $D_{201}^{102,105,109,110}$ | 001-0110-03 | Diode (1S2473VM) | 5 |
| $D_{107,108}$ | 001-0180-00 | Diode (1S188FM) | 2 |
| $D_{103,104,106}$ | 001-0236-00 | Diode (SVC201) | 3 |
| $D_{202,203,204}$ | 001-0237-00 | Diode (SVC303) | 3 |
| $D_{101}$ | 001-0242-00 | Diode (1SV99) | 1 |
| $TC_{105,201,203}$ | 004-1512-02 | Trimmer | 3 |
| $TC_{101,102,202}$ | 004-1512-03 | Trimmer | 3 |
| $IFT_{106}$ | 005-0689-00 | IF-transformer | 1 |
| $IFT_{101}$ | 005-0698-00 | IF-transformer | 1 |
| $IFT_{205}$ | 005-0707-00 | IF-transformer | 1 |
| $IFT_{105}$ | 005-0755-01 | IF-transformer | 1 |
| $IFT_{102,103}$ | 005-0757-00 | IF-transformer | 2 |
| $IFT_{104}$ | 005-0766-00 | IF-transformer | 1 |
| $IFT_{201}$ | 005-0795-00 | IF-transformer | 1 |
| $IFT_{202}$ | 005-0831-00 | IF-transformer | 1 |
| $IFT_{203,204}$ | 005-0873-00 | IF-transformer | 2 |
| $IFT_{107}$ | 060-0055-00 | Crystal filter | 1 |
| $L_{201}$ | 010-0930-00 | Coil | 1 |
| $L_{102}$ | 010-1180-00 | Coil | 1 |
| $L_{108}$ | 010-1570-01 | Coil | 1 |
| $L_{101}$ | 010-1708-00 | Coil | 1 |
| $L_{202}$ | 010-1717-00 | Coil | 1 |
| $T_{204}$ | 010-1724-00 | Coil | 1 |
| $T_{104}$ | 010-1820-00 | Coil | 1 |
| $T_{103}$ | 010-1821-00 | Coil | 1 |
| $L_{106}$ | 010-1861-00 | Coil | 1 |
| $T_{102}$ | 010-1911-00 | Coil | 1 |
| $T_{101}$ | 010-1912-00 | Coil | 1 |
| $L_{104}$ | 010-1913-00 | Coil | 1 |
| $T_{202}$ | 010-1931-00 | Coil | 1 |
| $T_{201,203}$ | 010-1940-00 | Coil | 2 |
| $L_{203}$ | 010-1960-26 | Coil | 1 |
| $VR_{201}$ | 012-3391-00 | Variable resistor (100kΩ) | 1 |
| $VR_{103}$ | 012-3393-00 | Variable resistor (3.3kΩ) | 1 |
| $VR_{104,105}$ | 012-3395-00 | Variable resistor (4.7kΩ) | 2 |
| $VR_{201,202}$ | 012-3548-01 | Variable resistor (33kΩ) | 2 |
| $VR_{101}$ | 012-3735-02 | Variable resistor (470Ω) | 1 |
| $CCT_{101}$ | 050-0010-00 | Component circuit | 1 |
| $IC_{104}$ | 051-0088-00 | IC (LA3350) | 1 |
| $IC_{102}$ | 051-0119-01 | IC (μPC577) | 1 |
| $IC_{101}$ | 051-0123-00 | IC (TA7302P) | 1 |
| $IC_{103}$ | 051-0159-00 | IC (Noise killer) FM | 1 |
| $IC_{202}$ | 051-0190-00 | IC ( // ) AM | 1 |
| $IC_{201}$ | 051-0302-00 | IC (LA1130) | 1 |
| $Q^{103,104,105,109,110,113,203,202,203,205,206,210,211,213}$ | 102-0458-02 | Transistor (2SC458B) | 14 |
| $Q_{108,111}$ | 102-0460-02 | Transistor (2SC460B) | 2 |
| $Q_{106}$ | 102-0461-02 | Transistor (2SC461B) | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| $Q_{102}$ | 102-0535-02 | Transistor (2SC535B) | 1 |
| $Q_{114}$ | 103-0571-11 | Transistor (2SD571K) | 1 |
| $Q_{204}$ | 108-0168-06 | FET (2SK168F) | 1 |
| $Q^{107,112,207}_{208,209}$ | 108-0049-08 | FET (2SK49H) | 5 |
| $Q_{101}$ | 108-0055-04 | FET (2SK55D) | 1 |
| $R_{221,229}$ | 110-1021-31 | Solid resistor (¼W1kΩ) | 2 |
| $R_{146,216}$ | 110-1041-31 | Solid resistor (¼W100kΩ) | 2 |
| $R_{107}$ | 110-1231-31 | Solid resistor (¼W12kΩ) | 1 |
| $R_{228}$ | 110-1241-31 | Solid resistor (¼W120kΩ) | 1 |
| $R_{223}$ | 110-1821-31 | Solid resistor (¼W1.8kΩ) | 1 |
| $R_{140}$ | 110-3331-31 | Solid resistor (¼W33kΩ) | 1 |
| $R_{118,139}$ | 110-4721-31 | Solid resistor (¼W4.7kΩ) | 1 |
| $R_{225}$ | 110-4731-31 | Solid resistor (¼W47kΩ) | 1 |
| $R_{156}$ | 111-1091-32 | Film resistor (¼W1Ω) | 1 |
| $R^{111,113,116,117}_{136,216}$ | 111-1011-32 | Film resistor (¼W100Ω) | 6 |
| $R_{106}$ | 111-1021-22 | Film resistor (¼W1kΩ) | 2 |
| $R^{126,142,153,155}_{218,234,237,239}$ | 111-1021-32 | Film resistor (¼W1kΩ) | 10 |
| $R^{124,130,223,219}_{220,227,225,231}$ | 111-1031-32 | Film resistor (¼W10kΩ) | 12 |
| $R_{102,103,105,125}$ | 111-1041-22 | Film resistor (¼W100kΩ) | 4 |
| $R^{141,211,217,233}_{235}$ | 111-1041-32 | Film resistor (¼W100kΩ) | 5 |
| $R_{207}$ | 111-1051-32 | Film resistor (¼W1MΩ) | 1 |
| $R_{101}$ | 111-1221-32 | Film resistor (¼W1.2kΩ) | 1 |
| $R_{123,145}$ | 111-1531-32 | Film resistor (¼W15kΩ) | 2 |
| $R_{202,212}$ | 111-2211-32 | Film resistor (¼W220Ω) | 2 |
| $R_{106}$ | 111-2221-22 | Film resistor (¼W2.2kΩ) | 1 |
| $R_{122}$ | 111-2221-32 | Film resistor (¼W2.2kΩ) | 1 |
| $R_{136}$ | 111-2231-32 | Film resistor (¼W22kΩ) | 1 |
| $R_{226}$ | 111-2241-32 | Film resistor (¼W220kΩ) | 1 |
| $R_{114}$ | 111-2721-32 | Film resistor (¼W2.7kΩ) | 1 |
| $R_{224}$ | 111-3301-32 | Film resistor (¼W33Ω) | 1 |
| $R_{112,115}$ | 111-3311-32 | Film resistor (¼W330Ω) | 2 |
| $R_{127}$ | 111-3321-22 | Film resistor (¼W3.3kΩ) | 1 |
| $R_{149}$ | 111-3321-32 | Film resistor (¼W3.3kΩ) | 1 |
| $R_{242}$ | 111-3331-32 | Film resistor (¼W33kΩ) | 1 |
| $R_{121}$ | 111-3351-32 | Film resistor (¼W3.3MΩ) | 1 |
| $R_{201}$ | 111-3391-32 | Film resistor (¼W3.3Ω) | 1 |
| $R_{208}$ | 111-3911-32 | Film resistor (¼W390Ω) | 1 |
| $R_{150,151,204}$ | 111-3921-32 | Film resistor (¼W3.9kΩ) | 3 |
| $R_{215}$ | 111-3931-32 | Film resistor (¼W39kΩ) | 1 |
| $R_{104}$ | 111-4701-22 | Film resistor (¼W47Ω) | 1 |
| $R_{222}$ | 111-4701-32 | Film resistor (¼W47Ω) | 1 |
| $R_{131,236}$ | 111-4711-32 | Film resistor (¼W470Ω) | 2 |
| $R_{109,144}$ | 111-4721-22 | Film resistor (¼W4.7kΩ) | 2 |
| $R_{128,209,245}$ | 111-4721-32 | Film resistor (¼W4.7kΩ) | 3 |
| $R_{143,214}$ | 111-4731-32 | Film resistor (¼W47kΩ) | 2 |
| $R_{110,119,120,121}$ | 111-5601-32 | Film resistor (¼W56Ω) | 4 |
| $R_{133}$ | 111-5611-32 | Film resistor (¼W560Ω) | 1 |
| $R_{205}$ | 111-5621-32 | Film resistor (¼W5.6kΩ) | 1 |
| $R_{132,147}$ | 111-5631-32 | Film resistor (¼W56kΩ) | 2 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| $R_{137}$ | 111-6811-32 | Film resistor (¼W680Ω) | 1 |
| $R_{134,135}$ | 111-6821-32 | Film resistor (¼W6.8kΩ) | 2 |
| $R_{209}$ | 111-8211-32 | Film resistor (¼W820Ω) | 1 |
| $R_{148,152,154,238}$ | 111-8221-32 | Film resistor (¼W8.2kΩ) | 4 |
| $R_{208}$ | 111-8231-32 | Film resistor (¼W82kΩ) | 1 |
| $C_{113,114,117,118,135,150,152,157,176,177,216,217,218,233,235,236,237}$ | 141-1032-10 | Polyester capacitor (50V0.01μF) | 17 |
| $C_{159}$ | 141-1522-10 | Polyester capacitor (50V0.0015μF) | 1 |
| $C_{115,139,199,151,154,201,207,212,213}$ | 141-2232-10 | Polyester capacitor (50V0.022μF) | 9 |
| $C_{227}$ | 141-3322-10 | Polyester capacitor (50V0.0033μF) | 1 |
| $C_{229}$ | 141-3332-10 | Polyester capacitor (50V0.033μF) | 1 |
| $C_{134,162,166,167,204,203,206,208,210,234,239}$ | 141-4732-10 | Polyester capacitor (50V0.047μF) | 11 |
| $C_{110,112}$ | 141-8222-10 | Polyester capacitor (50V0.0082μF) | 2 |
| $C_{231}$ | 141-8232-10 | Polyester capacitor (50V0.082μF) | 1 |
| $C_{132}$ | 143-1032-50 | Polystylen capacitor (10000pF) | 1 |
| $C_{165}$ | 143-1522-10 | Polystylen capacitor (0.0015μF) | 1 |
| $C_{131}$ | 143-2222-50 | Polystylen capacitor (2200pF) | 1 |
| $C_{105,207,144}$ | 174-8200-13 | Ceramic capacitor (82pFCH) | 3 |
| $C_{102,105,137,139,142,147,148,175}$ | 160-1022-05 | Ceramic capacitor (1000pFB) | 8 |
| $C_{123}$ | 160-2212-05 | Ceramic capacitor (220pFB) | 1 |
| $C_{109,202}$ | 160-3312-05 | Ceramic capacitor (330pFB) | 2 |
| $C_{106,111,140}$ | 174-1000-13 | Ceramic capacitor (10pFCH) | 3 |
| $C_{174}$ | 174-1090-13 | Ceramic capacitor (1pFCH) | 1 |
| $C_{149,232}$ | 174-2090-13 | Ceramic capacitor (2pFCH) | 2 |
| $C_{106}$ | 174-3090-13 | Ceramic capacitor (3pFCH) | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| $C_{222}$ | 174-3900-13 | Ceramic capacitor (39pFCH) | 1 |
| $C_{211}$ | 174-4310-57 | Ceramic capacitor (430pFUH) | 1 |
| $C_{234}$ | 174-4700-13 | Ceramic capacitor (47pFCH) | 1 |
| $C_{145}$ | 174-4090-13 | Ceramic capacitor (4pFCH) | 1 |
| $C_{103,141}$ | 174-5090-13 | Ceramic capacitor (5pFCH) | 2 |
| $C_{104}$ | 174-7090-13 | Ceramic capacitor (7pFCH) | 1 |
| $C_{103,167,144}$ | 174-8200-13 | Ceramic capacitor (82pCH) | 3 |
| $C_{164}$ | 042-0140-00 | Electrolytic capacitor (50V0.22μF) | 1 |
| $C_{225}$ | 042-0174-00 | Electrolytic capacitor (16V4.7μF TAN) | 1 |
| $C_{113,116,226,241}$ | 042-0176-00 | Electrolytic capacitor (16V10μF TAN) | 4 |
| $C_{153}$ | 042-0199-01 | Electrolytic capacitor (10V22μFTAN) | 1 |
| $C_{120}$ | 042-0219-00 | Electrolytic capacitor (10V220μF) | 1 |
| $C_{138}$ | 042-0226-00 | Electrolytic capacitor (35V0.1μF TAN) | 1 |
| $C_{127,155,235}$ | 042-0239-00 | Electrolytic capacitor (16V1μF TAN) | 3 |
| $C_{224}$ | 042-0246-01 | Electrolytic capacitor (16V2200μF) | 1 |
| $C_{122,124,160,161}$ | 180-1054-62 | Electrolytic capacitor (50V1μF) | 4 |
| $C_{125,126,136,168,169,173,203,221,225}$ | 180-1064-32 | Electrolytic capacitor (16V10μF) | 9 |
| $C_{130,209}$ | 180-1074-22 | Electrolytic capacitor (10V100μF) | 2 |
| $C_{133}$ | 180-2254-62 | Electrolytic capacitor (50V2.2μF) | 1 |
| $C_{223}$ | 180-2274-32 | Electrolytic capacitor (16V220μF) | 1 |
| $C_{163,219}$ | 180-4744-62 | Electrolytic capacitor (50V0.47μF) | 2 |
| $C_{230}$ | 180-4754-42 | Electrolytic capacitor (25V4.7μF) | 1 |
| $C_{128,143,146,156,158,172,215}$ | 180-4764-22 | Electrolytic capacitor (10V47μF) | 7 |
| $C_{171}$ | 180-4774-32 | Electrolytic capacitor (16V470μF) | 1 |
| $C_{220}$ | 180-3354-62 | Electrolytic capacitor (50V3.3μF) | 1 |

## ©Control circuit (RH-928V)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| $D_{301,302,303,304,305,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419}$ | 001-0110-03 | Diode (1S2473VM) | 20 |
| $D_{401}$ | 001-0169-02 | Diode (05Z6.8) | 1 |
| $D_{306}$ | 001-0169-05 | Diode (05Z9.1) | 1 |
| $L_{403}$ | 009-0470-02 | Choke | 1 |
| $L_{401}$ | 010-1653-00 | Coil | 1 |
| $L_{501}$ | 010-1686-00 | Coil | 1 |
| $L_{402,404}$ | 010-1883-00 | Coil | 2 |
| $VR_{302}$ | 012-3735-07 | Variable resistor (10kΩ) | 1 |
| $VR_{301}$ | 012-3735-09 | Variable resistor (33kΩ) | 1 |
| $IC_{301}$ | 051-0126-00 | IC (LM3900N) | 1 |
| $IC_{406}$ | 051-0172-00 | IC (TC4011BP) | 1 |
| $IC_{405}$ | 051-0265-00 | IC (μPA53C) | 1 |
| $IC_{408}$ | 051-0266-00 | IC (TA78L008P) | 1 |
| $IC_{404}$ | 051-0268-00 | IC (TC5002BP) | 1 |
| $IC_{403}$ | 051-0269-01 | IC (TC9123P) | 1 |
| $IC_{402}$ | 051-0270-00 | IC (TC9124AP) | 1 |
| $IC_{401}$ | 051-0271-00 | IC (TD6102P) | 1 |
| $IC_{409}$ | 051-0278-00 | IC (TA78L009) | 1 |
| $IC_{407}$ | 051-0291-00 | IC (μPC14308) | 1 |
| $IC_{302,303}$ | 051-0303-00 | IC (μPC575C2) | 2 |
| $X_{401}$ | 061-1036-00 | Crystal (6.4MHz) | 1 |
| $Q_{307,403,409}$ | 100-1015-25 | Transistor (2SA1015Y) | 3 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| $Q_{301,302}$ | 102-0732-28 | Transistor (2SC732GR) | 2 |
| $Q_{303,304,305,306,401,402,404,405,407}$ | 102-1815-28 | Transistor (2SC1815GR) | 9 |
| $Q_{406,408}$ | 100-0562-25 | Transistor (2SA562Y) | 2 |
| $R_{333,334}$ | 110-1011-41 | Solid resistor (½W100Ω) | 2 |
| $R_{423,434}$ | 111-1001-22 | Film resistor (¼W10Ω) | 2 |
| $R_{346,451,452}$ | 111-1011-22 | Film resistor (¼W100Ω) | 3 |
| $R_{317,354,412,414}$ | 111-1021-22 | Film resistor (¼W1kΩ) | 4 |
| $R_{309,310,323,324,337,340,345,418,429,431,432,433,436,446}$ | 111-1031-22 | Film resistor (¼W10kΩ) | 14 |
| $R_{343,349,350,352,405,409,448}$ | 111-1041-22 | Film resistor (¼W100kΩ) | 7 |
| $R_{339,353,447}$ | 111-1051-22 | Film resistor (¼W1MΩ) | 3 |
| $R_{435,436}$ | 111-1211-22 | Film resistor (¼W120Ω) | 2 |
| $R_{329,330}$ | 111-1241-22 | Film resistor (¼W120kΩ) | 2 |
| $R_{318}$ | 111-1531-22 | Film resistor (¼W15kΩ) | 1 |
| $R_{327,328}$ | 111-1541-22 | Film resistor (¼W150kΩ) | 2 |
| $R_{315,316}$ | 111-1811-22 | Film resistor (¼W180Ω) | 2 |
| $R_{331,332}$ | 111-2211-22 | Film resistor (¼W220Ω) | 2 |
| $R_{416,421}$ | 111-2221-22 | Film resistor (¼W2.2kΩ) | 2 |
| $R_{407,413,453}$ | 111-2231-22 | Film resistor (¼W22kΩ) | 3 |
| $R_{445}$ | 111-2241-22 | Film resistor (¼W220kΩ) | 1 |
| $R_{338}$ | 111-2251-22 | Film resistor (¼W2.2MΩ) | 1 |
| $R_{449}$ | 111-2741-22 | Film resistor (¼W270kΩ) | 1 |
| $R_{428}$ | 111-3311-22 | Film resistor (¼W330Ω) | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| R305,306,313,314 401,420 | 111-3321-22 | Film resistor (1/4W3.3kΩ) | 6 |
| R347,403 | 111-3331-22 | Film resistor (1/4W33kΩ) | 2 |
| R303,304,311,312 | 111-3341-22 | Film resistor (1/4W330kΩ) | 4 |
| R343,415 | 111-4711-22 | Film resistor (1/4W470Ω) | 2 |
| R344,417,419,422 430,444 | 111-4721-22 | Film resistor (1/4W4.7kΩ) | 6 |
| R315,320,321,322 325,326,406,408 410 | 111-4731-22 | Film resistor (1/4W47kΩ) | 9 |
| R341,346,351 | 111-4741-22 | Film resistor (1/4W470kΩ) | 3 |
| R301,302,402 | 111-5611-22 | Film resistor (1/4W560Ω) | 3 |
| R307,308,450 | 111-5621-22 | Film resistor (1/4W5.6kΩ) | 3 |
| R425,426,427 | 111-6811-22 | Film resistor (1/4W680Ω) | 3 |
| R431 | 111-6821-21 | Film resistor (1/4W6.8kΩ) | 1 |
| R316,336 | 111-6831-22 | Film resistor (1/4W68kΩ) | 2 |
| R437,438,439,440 443,442,443 | 111-8201-22 | Film resistor (1/4W82Ω) | 7 |
| R404 | 111-8231-21 | Film resistor (1/4W82kΩ) | 1 |
| C422 | 141-1022-10 | Polyester capacitor (50V0.001μF) | 1 |
| C105,411,416,418 419,420,421,430 434,441 | 141-1032-10 | Polyester capacitor (50V0.01μF) | 10 |
| C404,412,428 | 141-1042-10 | Polyester capacitor (50V0.1μF) | 3 |
| C413,415,431,342 | 141-2232-10 | Polyester capacitor (50V0.022μF) | 4 |
| C305,315 | 141-2732-10 | Polyester capacitor (50V0.027μF) | 2 |
| C437 | 141-6832-10 | Polyester capacitor (50V0.068μF) | 1 |
| C331,332 | 141-8232-10 | Polyester capacitor (50V0.082μF) | 2 |
| C426,427 | 174-3300-13 | Ceramic capacitor (33pFCH) | 2 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| C341,343,401 | 043-0121-00 | Ceramic capacitor (50V0.1μF) | 3 |
| C335 | 043-0127-00 | Ceramic capacitor (25V0.047μF) | 1 |
| C303,304,325,326 438 | 160-1022-05 | Ceramic capacitor (1000pF) | 5 |
| C334 | 160-2212-05 | Ceramic capacitor (220pF) | 1 |
| C305,306,317,318 | 160-3312-05 | Ceramic capacitor (330pF) | 4 |
| C319,320,335,436 439 | 042-0174-00 | Electrolytic capacitor (16V4.7μF) | 5 |
| C336,435 | 042-0176-00 | Electrolytic capacitor (16V10μF) | 2 |
| C329,330,340,405 406,407,417 | 042-0219-00 | Electrolytic capacitor (10V220μF) | 7 |
| C429 | 042-0227-00 | Electrolytic capacitor (16V2.2μF) | 1 |
| C307,308,333,423 424,432 | 042-0239-00 | Electrolytic capacitor (16V1μF) | 6 |
| C345,403 | 042-0246-01 | Electrolytic capacitor (16V2200μF) | 2 |
| C301,302,425,440 | 042-0249-00 | Electrolytic capacitor (16V0.22μF) | 4 |
| C410 | 042-0256-00 | Electrolytic capacitor (10V2200μF) | 1 |
| C344 | 042-0265-00 | Electrolytic capacitor (16V1000μF) | 1 |
| C311,312 | 180-1054-62 | Electrolytic capacitor (50V1μF) | 2 |
| C323,324 | 180-1074-22 | Electrolytic capacitor (10V100μF) | 2 |
| C327,328 | 180-2254-62 | Electrolytic capacitor (50V2.2μF) | 2 |
| C337,433 | 180-3364-32 | Electrolytic capacitor (16V33μF) | 2 |
| C313,314,315,321 322 | 180-4754-42 | Electrolytic capacitor (25V4.7μF) | 5 |
| C316,338,402,406 | 180-4764-22 | Electrolytic capacitor (10V47μF) | 4 |
| C434 | 180-4774-32 | Electrolytic capacitor (16V470μF) | 1 |

## ◎Remote controller (RKH-001-100)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| D501~515 | 001-0112-00 | Diode (1S1588) | 15 |
| D516 | 001-0207-00 | Diode (Red) | 1 |
| D517 | 001-0207-01 | Diode (Green) | 1 |
| D518,520 | 001-0207-02 | Diode (Yellow) | 2 |
| D519 | 001-0207-03 | Diode (Orange) | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| D521,522 | 001-0259-00 ~04 | Diode (Display) | 2 |
| S501~507 | 013-3449-00 | Switch | 7 |
| PL501 | 017-0324-03 | Pilotlamp | 1 |
| R501 | 110-2411-31 | Solid resistor (1/4W240Ω) | 1 |
| C501,502 | 141-5632-10 | Polyester capacitor (50V0.056μF) | 2 |

## ◎Electrical section (EH-124U)

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| D301,302,201,202 303,308 | 001-0110-03 | Diode (2S2473VE) | 6 |
| D307,305,304,306 | 001-0190-01 | Diode | 5 |
| T301,302 | 009-0621-00 | Choke | 2 |
| L201 | 010-1656-00 | Coil | 1 |
| RY1 | 014-0468-00 | Relay (G2K-3-5A) | 1 |
| C102,103,202,205 | 042-0239-00 | Electrolytic capacitor (15V1μF) | 4 |
| C303,302 | 042-0246-01 | Electrolytic capacitor (16V2200μF) | 2 |
| IC1,2,3,4 | 051-0256-02 | IC | 4 |
| B301 | 060-0049-01 | Braker | 1 |
| Q301,303 | 102-0458-02 | Transistor (2SC458B) | 2 |
| Q302 | 102-2655-15 | Transistor (2SC2655-O) | 1 |
| R304,307 | 111-1021-22 | Film resistor (1/4sW1KΩ) | 2 |
| R305,202,302,305 | 111-1031-22 | Film resistor (1/4sW10KΩ) | 4 |
| R201,203 | 111-1541-22 | Film resistor (1/4sW150KΩ) | 2 |
| R201 | 111-2721-22 | Film resistor (1/4sW2.7KΩ) | 1 |

| REF.NO. | PART NO. (ORDER NO.) | DESCRIPTION | Q'TY |
|---|---|---|---|
| R105,106,203,204 | 111-3311-22 | Film resistor (1/4sW330Ω) | 4 |
| R309 | 111-3321-22 | Film resistor (1/4sW3.3KΩ) | 1 |
| R306 | 111-4721-22 | Film resistor (1/4sW4.7KΩ) | 1 |
| R105,205 | 111-4731-22 | Film resistor (1/4sW47KΩ) | 2 |
| R305 | 111-4741-22 | Film resistor (1/4sW470KΩ) | 1 |
| C101,201 | 141-1022-10 | Polyester capacitor (50V0.001μF) | 2 |
| C305 | 141-1032-10 | Polyester capacitor (50V0.01μF) | 1 |
| C115,116,120,121 215,216,220,221 | 141-1042-10 | Polyester capacitor (50V0.1μF) | 8 |
| C104,107,204,207 | 141-1522-10 | Polyester capacitor (50V0.0015μF) | 4 |
| C112,118,212,218 | 141-6832-10 | Polyester capacitor (50V0.068μF) | 4 |
| C106,111,206,211 | 150-2202-13 | Ceramic capacitor (22PFCH) | 4 |
| C114,117,214,217 | 160-1512-05 | Ceramic capacitor (150PFB) | 4 |
| C109,110,209,210 | 180-2274-22 | Electrolytic capacitor (10V220μF) | 4 |
| C105,106,115,116 205,206,215,216 | 180-4764-22 | Electrolytic capacitor (10V47μF) | 8 |
| C304 | 181-1063-32 | Electrolytic capacitor (16V10μFLN) | 1 |
| C303 | 181-3363-32 | Electrolytic capacitor (16V33μFLN) | 1 |

# IC PIN VOLTAGE:

## TUNER CIRCUIT

IC101 (051-0123-00)

| Pin No. | Voltage[V] |
|---|---|
| 1 | 2.4 |
| 2 | 2.4 |
| 3 | 3.5 |
| 4 | 0 |
| 5 | |
| 6 | 6.0 |
| 7 | 6.9 |

IC102 (051-0119-01)

| Pin No. | Voltage[V] |
|---|---|
| 1 | 5.0 |
| 2 | 1.7 |
| 3 | 1.7 |
| 4 | 0 |
| 5 | 6.4 |
| 6 | 2.8 |
| 7 | 6.5 |

IC103 (051-0159-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 3.5 | 9 | 0.5 |
| 2 | 0 | 10 | 7.2 |
| 3 | 0 | 11 | 6.5 |
| 4 | 3.5 | 12 | 3.2 |
| 5 | 0 | 13 | 0.4 |
| 6 | 5.8 | 14 | |
| 7 | 6.1 | 15 | 0 |
| 8 | 0 | 16 | 0 |

IC104 (051-0088-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 7.8 | 9 | |
| 2 | 2.5 | 10 | 1.9 |
| 3 | 5.2 | 11 | 1.9 |
| 4 | 4.2 | 12 | 1.9 |
| 5 | 4.2 | 13 | 1.9 |
| 6 | 7.3 | 14 | 1.9 |
| 7 | 0 | 15 | 1.9 |
| 8 | 0.4 | 16 | 2.6 |

IC201 (051-0302-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 2.0 | 9 | 3.5 |
| 2 | 2.0 | 10 | 0 |
| 3 | 5.5 | 11 | 12.0 |
| 4 | 5.5 | 12 | 0.6 |
| 5 | 12.0 | 13 | 12.0 |
| 6 | 1.6 | 14 | 1.7 |
| 7 | 12.0 | 15 | 1.6 |
| 8 | 12.0 | 16 | 4.5 |

IC202 (051-0190-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 0 | 9 | 2.0 |
| 2 | 0 | 10 | 2.8 |
| 3 | 0 | 11 | 2.8 |
| 4 | 11.0 | 12 | 0 |
| 5 | 1.0 | 13 | |
| 6 | 0 | 14 | 0 |
| 7 | 11.0 | 15 | 1.8 |
| 8 | 0 | 16 | 2.4 |

NOTE) 1. The listed voltage shows the values between the pins and ground.
2. The listed voltage shows the values, measured with a digital voltmeter with an internal resistance of 5MΩ.

## CONTROL CIRCUIT

IC401 (051-0271-00)

| Pin No. | Voltage[V] |
|---|---|
| 1 | 6.95 |
| 2 | 0.15 |
| 3 | |
| 4 | 4~6 |
| 5 | 0 |
| 6 | 0.015 |
| 7 | 6.96(0) |
| 8 | 6.95 |
| 9 | |

( ) AM

IC402 (051-0270-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 0 | 15 | 0~7 |
| 2 | 0.38 | 16 | 0~7 |
| 3 | 0.002 | 17 | 0~7 |
| 4 | 0.002 | 18 | 0~7 |
| 5 | 0.002 | 19 | 0~7 |
| 6 | 4.93 | 20 | 0~7 |
| 7 | 3.28 | 21 | 0~7 |
| 8 | 7.1 | 22 | 0~7 |
| 9 | 3.2 | 23 | 0.9 |
| 10 | 0.07 | 24 | 0.14 |
| 11 | 7.71 | 25 | 0.015 |
| 12 | 0.03 | 26 | 0.015 |
| 13 | 6.96(0) | 27 | 2.96 |
| 14 | 0~7 | 28 | 7.15 |

( ) AM

IC403 (051-0269-01)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 0 | 12 | 3.5 |
| 2 | 0~7 | 13 | 7.77 |
| 3 | 0~7 | 14 | 0.67 |
| 4 | 0~7 | 15 | 1.95 |
| 5 | 0~7 | 16 | 2.57 |
| 6 | 0~7 | 17 | (7.6) |
| 7 | 0~7 | 18 | 7.85(0.2) |
| 8 | 0~7 | 19 | 4.0 |
| 9 | 0~7 | 20 | 3.6 |
| 10 | 0~7 | 21 | 3.12 |
| 11 | | 22 | 7.8 |

( ) Muting

IC301 (051-0126-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 0.546 | 8 | 0.567(0.07) |
| 2 | 0.526(0.3) | 9 | 0.099(8.78) |
| 3 | 0.57 | 10 | 0.097(8.8) |
| 4 | 0.1(8.95) | 11 | 0.58(0.017) |
| 5 | 4.49 | 12 | 0.31 (0.62) |
| 6 | 0.54 | 13 | 0.061(0.58) |
| 7 | 0 | 14 | 9 |

( ) Search

IC302,303(051-0303-00)

| Pin No. | Voltage[V] |
|---|---|
| 1 | 1.93 |
| 2 | 13.88 |
| 3 | 13.3 |
| 4 | 7.9 |
| 5 | 6.74 |
| 6 | 14.0 |
| 7 | 0.01 |
| 8 | 1.94 |

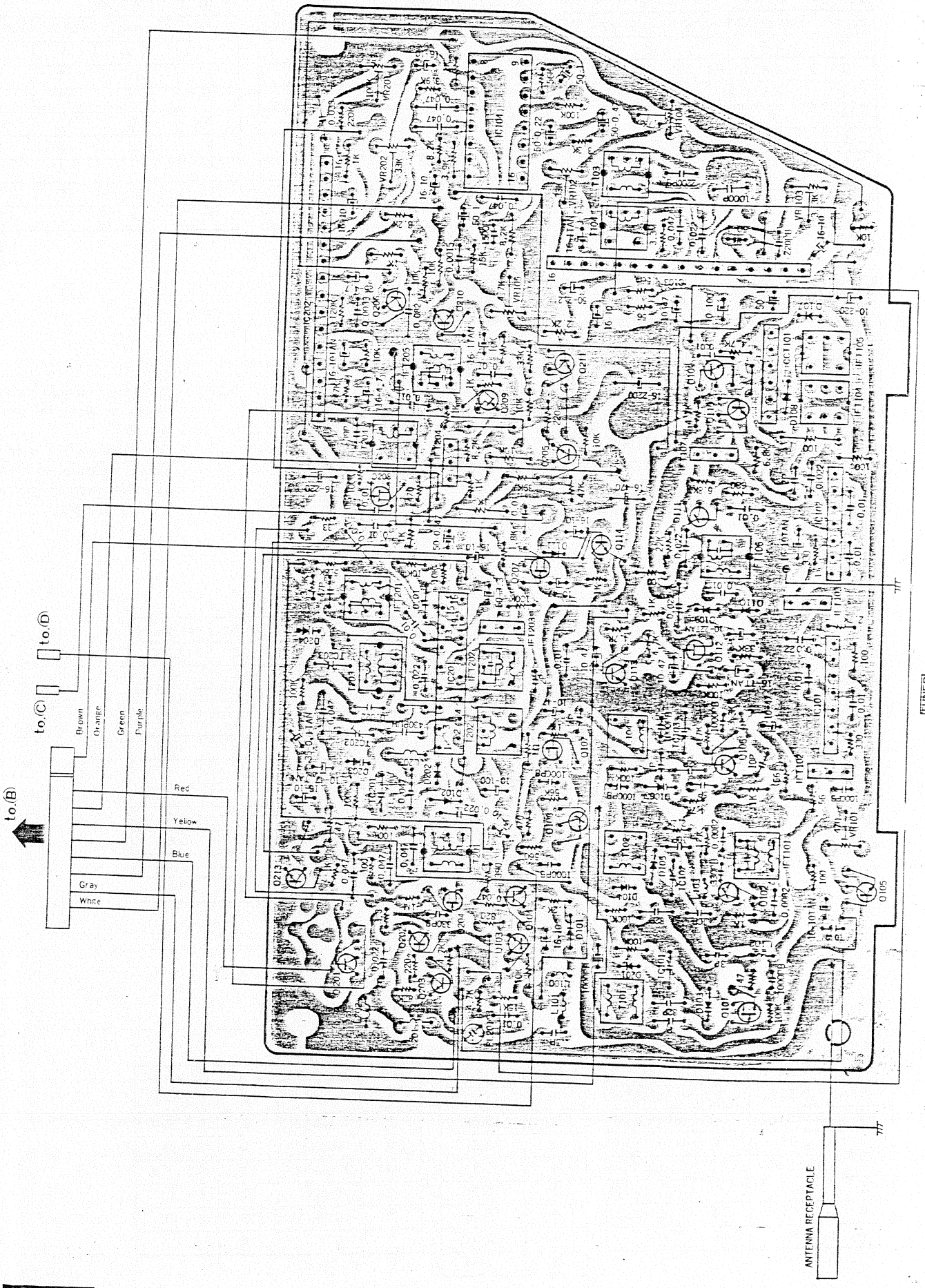
IC406 (051-0172-00)

| Pin No. | Voltage[V] | Pin No. | Voltage[V] |
|---|---|---|---|
| 1 | 8 (2) | 8 | 0.3 (5.4) |
| 2 | 8.1(0.14) | 9 | 0.3 (5.4) |
| 3 | 0 (8) | 10 | 8.1 (0) |
| 4 | 8.1(0.14) | 11 | 0.15(8.0) |
| 5 | 0 (6.0) | 12 | 8.1 (0) |
| 6 | 0 (6.0) | 13 | 8.1 (0) |
| 7 | 0 | 14 | 8 |

( ) Search

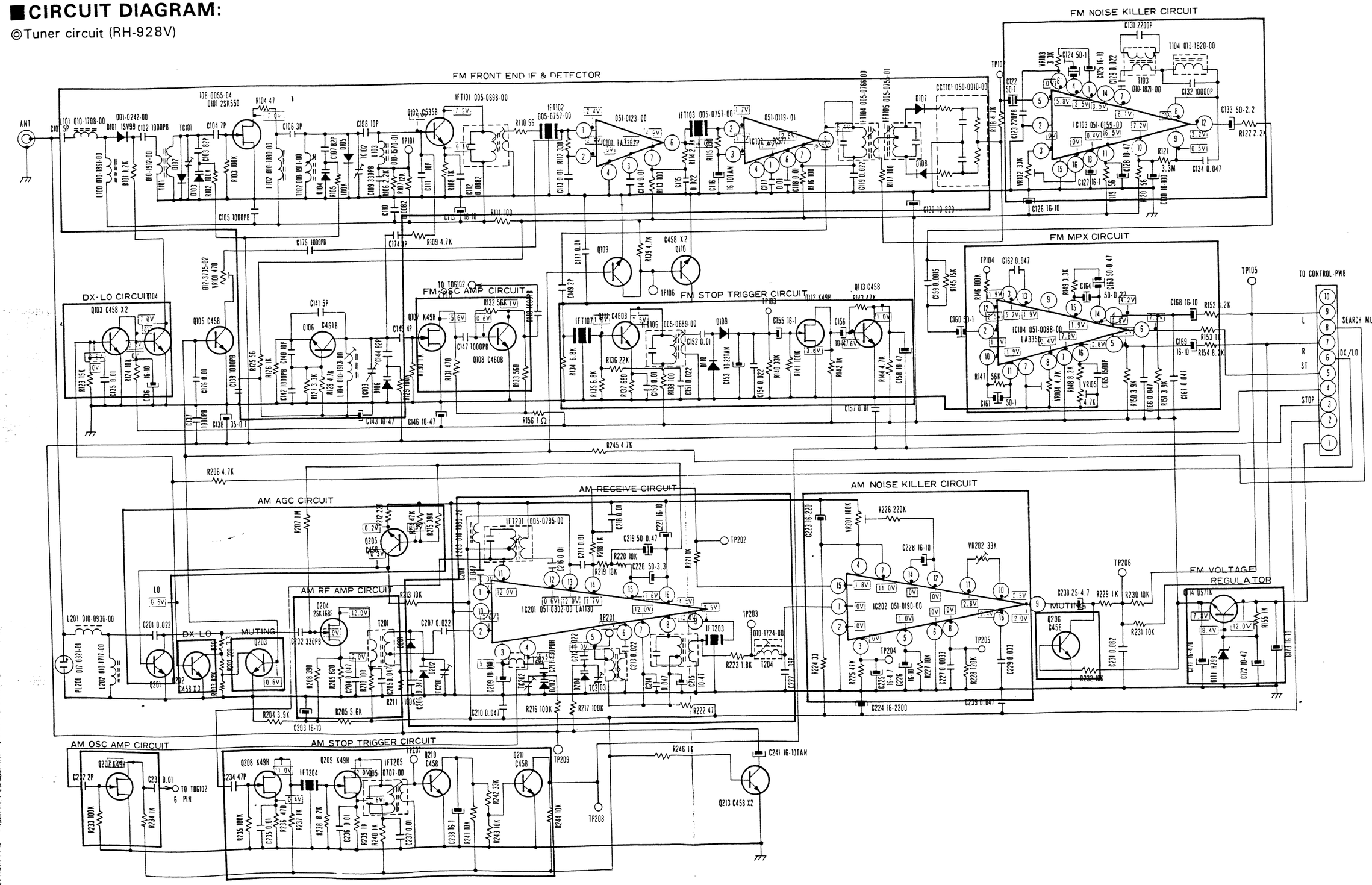
# PRINTED WIRING BOARD:

©Tuner circuit (RH-928V)



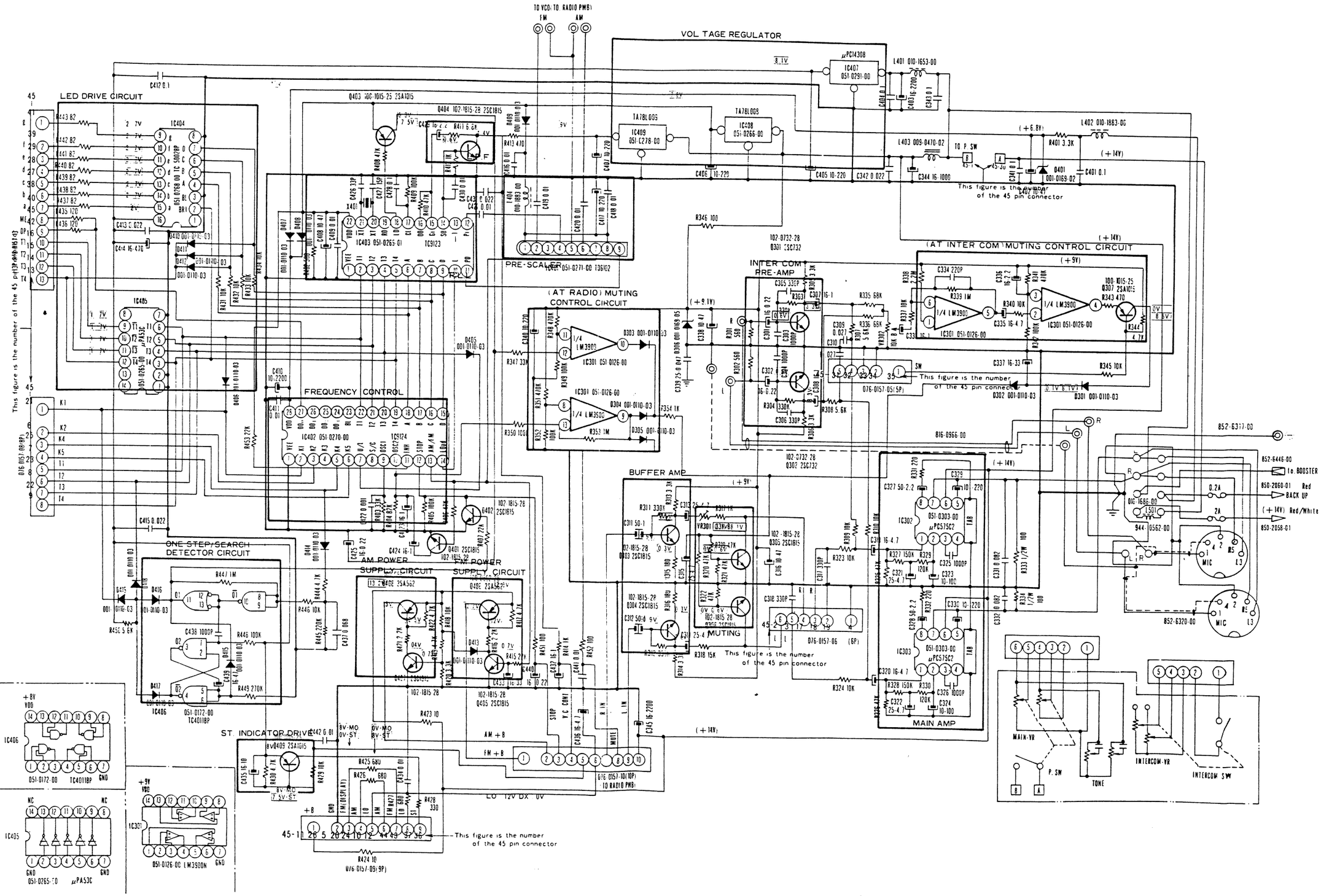
# ■CIRCUIT DIAGRAM:

◎Tuner circuit (RH-928V)



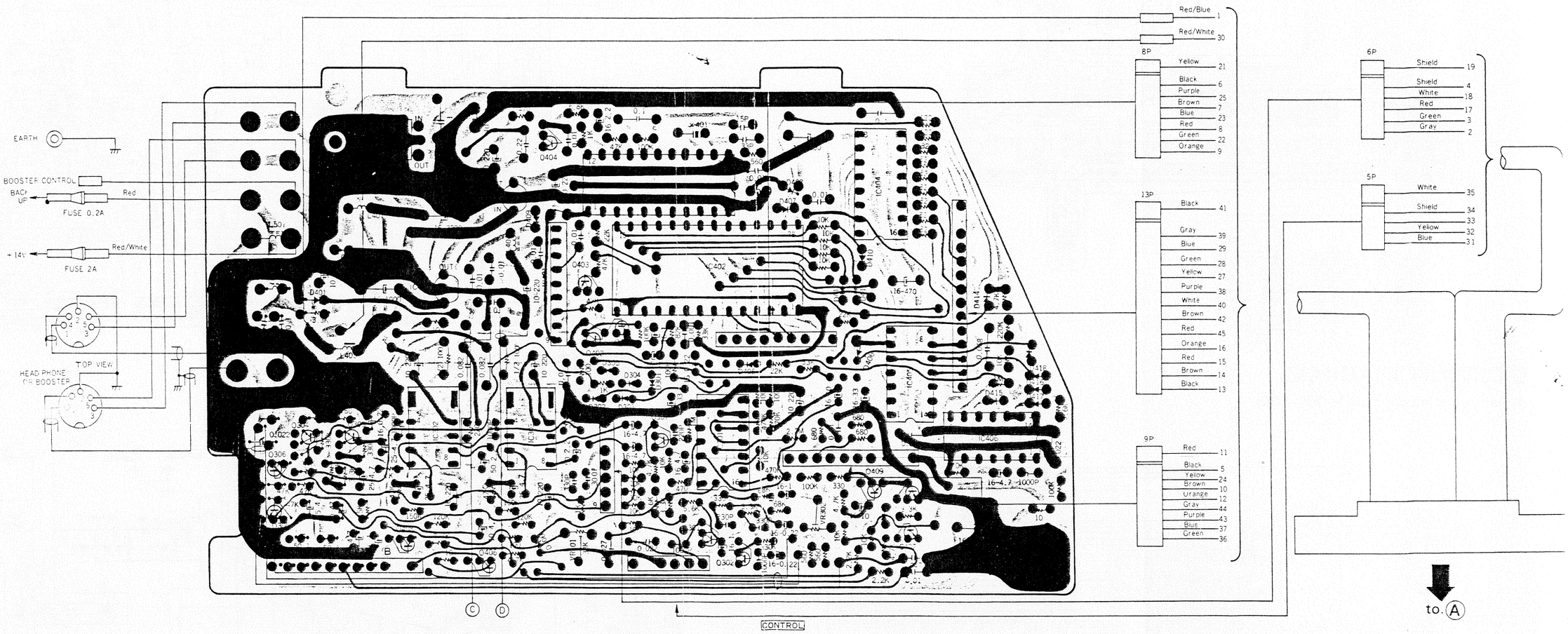
# ■CIRCUIT DIAGRAM:

◎Control circuit (RH-928V)



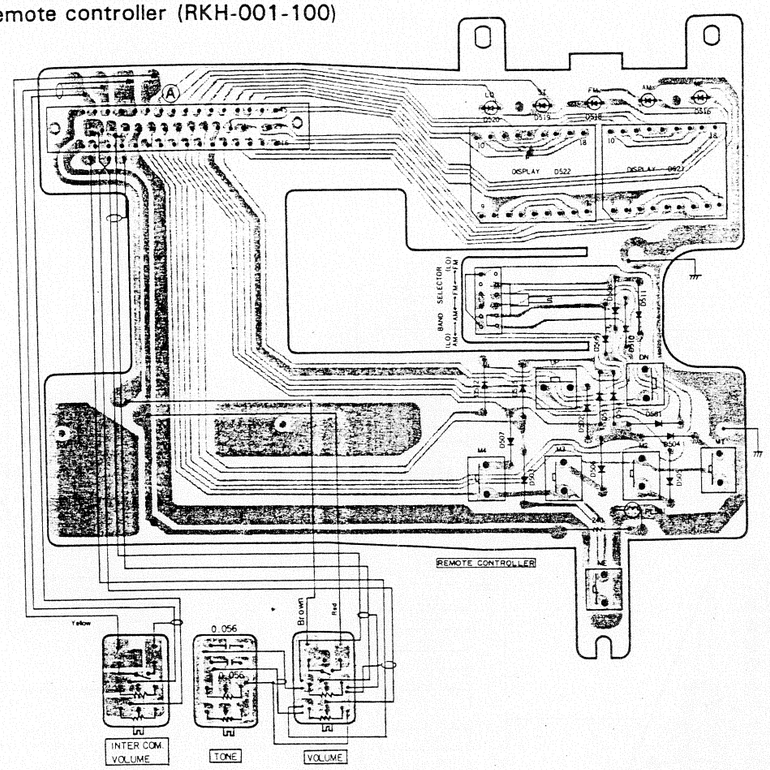
## ■PRINTED WIRING BOARD:

◎Control circuit (RH-928V)



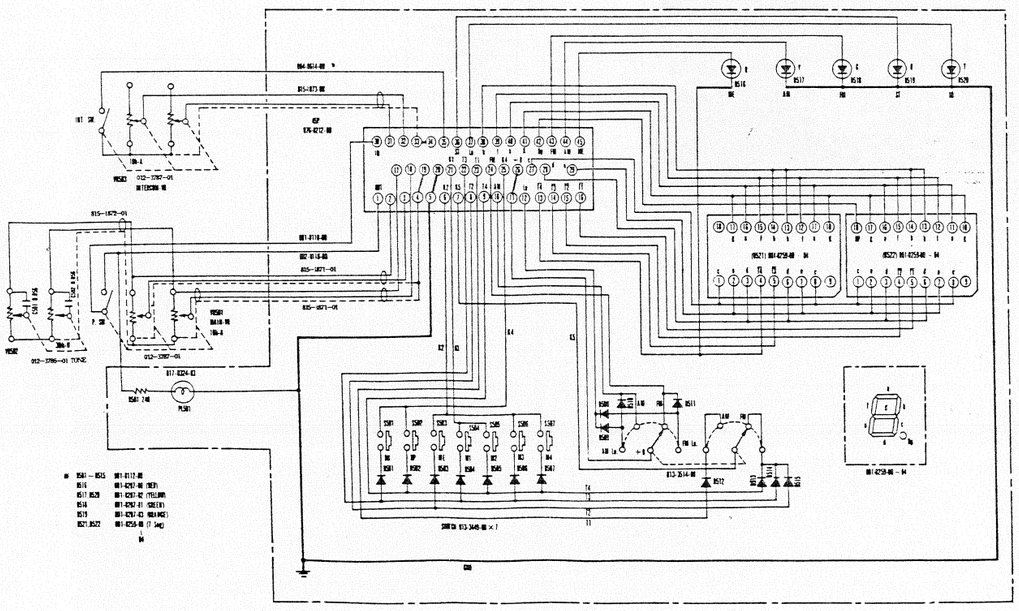
## ■PRINTED WIRING BOARD:

◎Remote controller (RKH-001-100)




## ■CIRCUIT DIAGRAM:

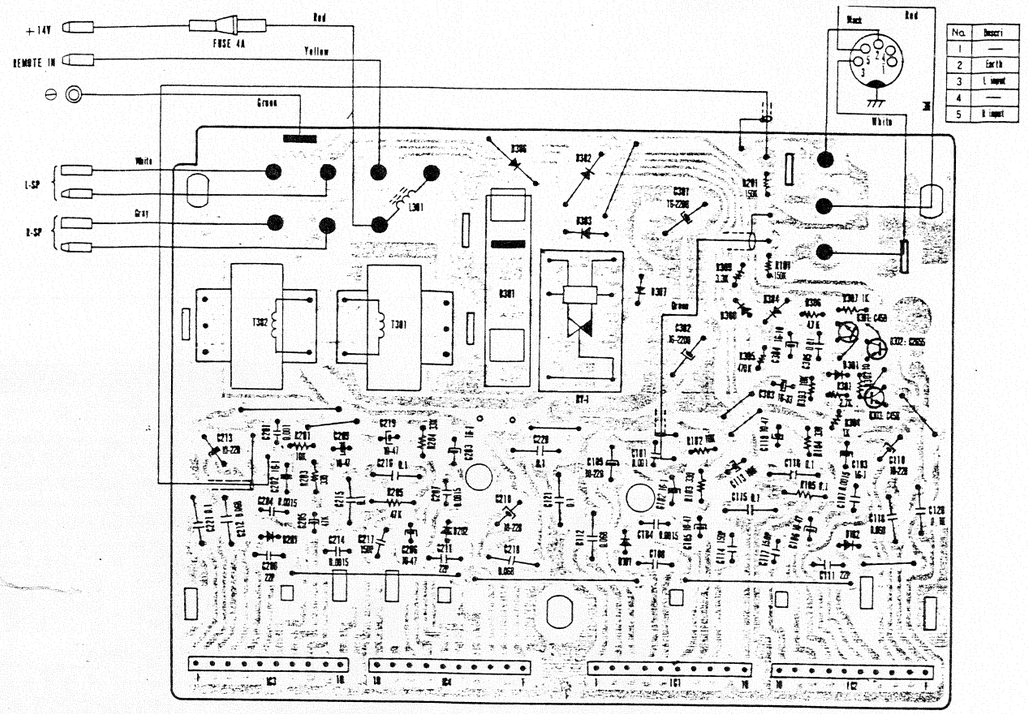
◎Remote controller (RKH-001-100)





## ■PRINTED WIRING BOARD:

◎Power booster (EH-124U)




| No. | Descri |
|---|---|
| 1 | — |
| 2 | Earth |
| 3 | L input |
| 4 | — |
| 5 | R input |

## ■CIRCUIT DIAGRAM:

◎Power booster (EH-124U)